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ADJUSTMENT TO PHYSICAL HANDICAP AND ILLNESS: A SURVEY OF THE SOCIAL PSYCHOLOGY OF PHYSIQUE AND DISABILITY

By

Roger G. Barker
Beatrice A. Wright
Mollie R. Gonick

SOCIAL SCIENCE RESEARCH COUNCIL
230 PARK AVENUE . . . NEW YORK 17

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The Social Science Research Council was organized in 1923 and formally incorporated in 1924. Its members are chosen from seven associated professional societies in the social sciences and from related disciplines. It is the purpose of the Council to plan and promote research in the social fields.

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FOREWORD

WORLD War II greatly increased the number of persons who face the problem of adjustment to physical handicap. This problem thus has immediate practical importance as well as permanent scientific significance for the understanding of human behavior as affected by change in physical condition. The subject is of research interest directly and indirectly to all the disciplines participating in the work of the Social Science Research Council. A critical appraisal of the literature in this field is, therefore, a particularly appropriate project for sponsorship by the Council.

One of the crucial questions in the study of physical handicap inheres in its effect upon the attitudes and personality of the individual. This point, a matter of common sense observation, received classic statement over three hundred years ago by two eminent Englishmen. Robert Burton, in the *Anatomy of Melancholy,* wrote optimistically and uncritically of the beneficial effects of physical handicaps upon personality:

> Deformities and imperfections of our bodies, as lameness, crookedness, deafness, blindness, be they innate or accidental, torture many men: yet this may comfort them, that those imperfections of the body do not a whit blemish the soul, or hinder the operations of it, but rather help and much increase it.

Sir Francis Bacon more realistically perceived the wide range of the divergent reactions to physical handicaps:

> Deformed persons are commonly even with nature for, as nature hath done ill by them, so do they by nature, being for the most part (as the Scripture saith) void of natural affection, and so they have their revenge of nature. Certainly there is a consent between the body and the mind, and where nature erreth in the one she ventureth in the other. . . . Whosoever hath anything fixed in his person that doth induce contempt, hath also a perpetual spur in himself to rescue and deliver himself from scorn; therefore, all deformed persons are extreme bold. . . . Also, it stirreth, in them industry, . . . Again, in their superiors, it quencheth jealousy towards them, as persons that they think they may at pleasure despise, and it layeth their competitors and emulators asleep, as never believing they should be in possibility of advancement till they see them in possession; so that, upon the matter in a great wit, deformity is an advantage to rising. . . . they will, if they be of spirit, seek to free themselves from scorn, which must be either by virtue or malice; and therefore, let it not be marvelled if sometimes they prove excellent persons.

Quotations from literature, such as the above, might be multiplied. They indicate the lively interest of observers in the psychological effects of physical handicaps. Significantly, however, these writers are seldom in agreement. Their observations, even when penetrating, are likely to be too sweeping and their generalizations are not held in check by any systematic and rigorous examination of data. Only research can accumulate a tested body of knowledge that will provide understanding of the behavior of those handicapped by injury and illness and that will supply the basis for improved methods of treatment.

The problems of the returning handicapped veteran made timely this review and appraisal of research upon various aspects of adjustment to physical handicap and illness. The Committee on Social Adjustment of the Social Science Research Council was fortunate in securing for this task the services of Dr. Roger G. Barker who for several years had been engaged in research in this field.

Dr. Barker conceives personal adjustment to physical handicap as a problem in social psychology, i.e., in terms of the effect of a deviation in physique upon the personality and social behavior of the individual. He has not been content, therefore, to limit himself to a critical appraisal of the literature. He has rather attempted to develop a theoretical framework of the interrelations between the constitutional disabilities and illnesses and the person's reaction to them. The conceptual system of explanation elaborated by Dr. Barker cannot be expected to gain universal acceptance by workers in the field, since there are wide theoretical divergences among students of personality. It will, however, challenge existing theories which have not been so carefully formulated and in this way should stimulate more searching and precise analysis.

This critique by Dr. Barker and his associates, based on careful review of several hundred studies, does not yield a complete body of knowledge concerning adjustment to physical handicap and illness. The chief conclusion of the authors is that, with notable exceptions, research in this field too often has had serious limitations either in method or in the small number of cases studied, with the result that findings often are suggestive rather than conclusive. A chief value of the critique, therefore, will consist in the stimulation of further research with greater precision in definition of concepts and more rigid methods of formulating and testing hypotheses, and with sufficient numbers of cases to permit adequate statistical treatment. And in spite of the methodological shortcomings of much of the work in the field there emerges an important body of knowledge of real value to those who are engaged in the treatment and counseling of the handicapped.

COMMITTEE ON SOCIAL ADJUSTMENT
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PREFACE

THE association of particular kinds of behavior with particular varieties of physique is a frequently observed phenomenon of human nature. In American culture, for example, it requires no extensive investigation to reveal that characteristic differences in behavior are frequently associated with differences in sex, with differences in physical maturity, and with certain differences in race. In cases where grouped data do not reveal such associations, case studies frequently show the importance of the individual's physique as a factor in his personal adjustment. It is with certain aspects of this problem that we are concerned in this publication, namely, the relation between social behavior and personality and normal and pathological variations in physical size, strength, motor ability, sensory acuity, and health.

The authors' motivation in preparing this publication has been to bring together what is known in this area and to point out problems for investigation. The state of our knowledge of these matters is little above the level of folklore in many respects, and in others that which is known has very limited circulation. Yet this limited knowledge serves as the basis for such important practical affairs as doctor-patient relations, occupational therapy regimes, hospital organization, industrial employment policies, industrial accident legislation, vocational rehabilitation programs and benefits for disabled veterans. This is a field ripe for investigation; techniques are available for the solution of problems of great theoretical and immediate practical importance.

We have tried to make this more than an annotated bibliography. We have sought to define a field of social psychology that has heretofore been dealt with only in a fragmentary fashion, and we have attempted to evaluate present day knowledge in this field within a framework of explicitly stated concepts and scientific methods.

This survey would have been impossible without the generous support of the Social Science Research Council, the Stanford University Social Science Research Committee, the G. Stanley Hall Genetic Psychology Fund, Clark University, and the cooperation of many individuals. We are especially indebted to Professor Quinn McNemar for encouragement to undertake the project and for help in seeing it through. Mrs. Grace Brown, Mrs. Susan Deri, Mrs. Barbara Mayer Kirchheimer, Mrs. Leola Horowitz, Mr. Lee Meyerson, and Mr. Milton Horowitz contributed greatly to the successful completion of the undertaking.

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CHAPTER I

INTRODUCTION

The Somatopsychological Problem

IN delimiting that part of the problem of the relations between physique[1] and behavior which we wish to discuss several kinds of causal relation between them should be defined.

Relation I

Physique and behavior may be dynamically independent within the individual and statistically uncorrelated in massed data. For example, no relation has been found to exist between finger print pattern and behavior.

Relation II

Physique and behavior may be statistically correlated in massed data, but be dynamically independent within the individual.

Relation IIa. Correlation without causal interdependence may result from conditions that operated in the past. Thus, certain verbal skills are associated with female physique, but the female physical constitution may not be a necessary condition of these greater verbal skills, or vice versa; both may be independent products of the same or linked genes. The large size of important executives may not be a determinative factor in their achievements; both may be due to the superior nutrition and social advantages provided by upper class parents.

Relation IIb. The correlated characteristics may be the independent products of currently operating conditions. For example, tough, pigmented skin and squinting behavior are frequently associated, and both may be independent products of the action of the sun and wind.

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[1] The term physique is used in this discussion to denote any structural or functional aspect of the physical organism except the central nervous system. We are not raising the epistemological body-mind problem, nor the physiological problem of the central mechanisms of behavior. We are concerned with the extra-central-neural physique and its relations to behavior. For those who prefer neural constructs, we may say we are concerned with the relations of the extra-central-neural physique to the central mechanisms underlying behavior.

Relation III

Physique and behavior may be dynamically interrelated in such a way that physique determines behavior.

Relation IIIa. Physique may influence behavior by acting directly upon neuromuscular mechanisms. The behavior involved may be limited as when the fingers are cold and become paralyzed and anaesthetic, when vitamin A deficiency leads to night blindness, or when scar tissue leads to restricted joint action. Or, behavioral involvement may be widespread as when excess blood sugar leads to diabetic behavior symptoms; or when inharmonious growth of body segments in adolescence, by changing the mass of the extremities without a compensating change in muscle strength, leads to clumsiness. In all of these cases, the behavior affected is limited to that directly dependent upon the particular neuromuscular mechanism involved.

Relation IIIb. Physique may influence behavior far beyond the limits of the neuromuscular mechanisms directly affected. Much behavior is molar: it persists until certain goal behavior occurs, and a variety of molecular behavior elements enter as parts in the completed action. When this is the case, a change in any one of the parts due to the action of physique under Relation IIIa will lead to other behavioral adjustments. This occurs when the behavior directly affected by physique has the position of a tool or means for carrying out larger behavior episodes. The behavioral effect of cold fingers will not be limited to anaesthesia and paralysis, but will ramify in accordance with the unique meaning of finger action in the particular situation. It may lead to rubbing the hands with snow, to attempt to strike a match by holding it in the teeth, to going into the house, etc. Night blindness may lead to stumbling in the dark or to eating vast amounts of carrots. Diabetic behavior symptoms may require abandoning engineering as a career. Because of clumsiness a boy may be unable to participate in the gymnastic exhibition.

Insofar as the behavior directly dependent on physique has a unique and not common significance for molar actions, correlations in massed data will not be expected. This raises the question of whether general laws under which these individual cases can be subsumed can be discovered. That it is in principle possible, the older sciences have proven. There is, however, a widespread belief that in human behavior the individual factors are so complex, if not unlawful, that such an aspiration is unrealistic, and therefore the individual case must be studied uniquely and not in terms of general laws. We hope that this monograph will be one more demonstration that this view is false.

Relation IIIc. Physique may influence behavior by serving as a stimulus to the self and others. Physique has a basic significance as an indicator of the position of the individual in his own life career. Thus a person viewing himself in the mirror, and finding evidence of illness or advancing age, may react in very far reaching ways: by going to the doctor, by dyeing his hair, by having a "last fling." Physique also has a fundamental social significance to the individual in terms of the cultural mores within which he lives, for physique is one of the important criteria upon which social distinctions are based. A person who lives in a culture where social distinctions are made upon the basis of age, sex, race, stature, beauty, or physical normality will behave, upon observing his own physique, in accordance with his evaluation of these criteria. Likewise others will react to his physique by accepting or rejecting him in accordance with their evaluation of these physical criteria of social classification. Thus a physically mature fourteen year old girl is more likely to have the opportunity to attend the senior ball than a physically childish girl of the same age. A Negro could not be elected president of the United States.

Relation IV

Physique and behavior may be dynamically interrelated in such a way that behavior determines physique.

Relation IVa. Behavior may influence physique by directly determining muscle tonus, posture, glandular activity, and metabolic state. Thus the physique (posture, muscle tonus) of a person posing for his photograph to be used in a political campaign will differ from his physique as he listens to the report that he has lost the election. And the physique (chemistry of the blood) of a person in a state of great anxiety will differ from that of a person in a euphoric mood. Secondary effects upon neural activity, and eventually upon organic function and structure, are well known.

Relation IVb. Behavior may influence physique by determining conditions of growth and function over both short and long periods of time. The physique of a sedentary business executive will change if he becomes a cowboy. The stature of American-born Japanese who from infancy have behaved in accordance with American mores differs from that of native Japanese.

The Somatopsychological Relation

Some of these relations between physique and behavior have been intensively studied. Studies of genetic, embryonic, and cultural sources of behavior and physique have been productive (Relation II). Physiological psychology is a well established discipline with a large literature (Relation IIIa). The newly designated field of psychosomatic studies (Relation IVa) and the old one of the constitutional basis of temperament (Relations II and IIIa) are both active at the present time. Many studies of the influence of behavioral conditions on physical growth and function have been made (Relation IVb).

There remains the problem of the purely psychological and social significance of physique (Relations IIIb and IIIc). Certain specific problems within these fields have been intensively investigated, notably the social significance of race and sex. However, these have not been placed in the larger setting of the general problem of the social psychology of physique. We should like to designate this the *somatopsychological problem.*

There is a widespread assumption among laymen and social scientists that physique in its social-psychological aspects is of great importance in the motivation of the individual. Among clinical psychologists and psychiatrists there is a great superstructure of theory based upon case studies and clinical experience which assumes that important sources of personal maladjustment lie in the somatopsychological situation of the individual. It is the purpose of this publication to bring together the widely scattered knowledge bearing upon this problem. We propose to raise this question: What is known of the social and psychological significance of physique and in terms of what concepts can the known facts be described and explained?

We shall raise this question in connection with a variety of differences in physique. A large part of our discussion will deal with the physically disabled, i.e., the pathologically deviant groups, although normal variations will be included too.

The importance of somatopsychological research in increasing our understanding of adjustment mechanisms and personality development will be obvious to all. Such knowledge has a very practical significance in addition to its theoretical importance. Since World War I there has been a great increase in organized social efforts to provide education and guidance for physically deviant persons so that they may become self-supporting members of society. These efforts have increased still further since World War II. Thus far they have been based largely on common sense and practical experience. It is highly desirable that the results of pertinent scientific inquiries be made available to workers in this field, and that further investigations be fostered. It is our hope that this publication may contribute toward these ends.

Limits of the Present Review

Physical Variations

Not all of the multitudinous ways in which the human physique varies are relevant to the somatopsychological problem. Criteria of relevancy are: 1) The physique must instigate behavior which in turn requires behavioral adjustments not directly induced by the particular physical characteristic in question; or 2) the physique must be perceived by the person or others as being of significance for his life career; or 3) the physique must be perceived by the person or others as having social significance in the particular culture.

While not all physical variations have significance in terms of these criteria, a vast number *may* have significance for particular individuals in particular circumstances. The kinds of physical variations which have somatopsychological effects and for which there is some relevant scientific literature are listed below:

1. Size
2. Age
3. Race
4. Sex
5. Cosmetic defect
6. Muscular strength
7. Motor ability
8. Speech defects
9. Visual impairments
10. Auditory impairments
11. Tuberculosis
12. Heart disease
13. Diabetes mellitus
14. Rheumatism
15. Leprosy
16. Cancer
17. Orthopedic disability
18. Acute illness

From this list we have eliminated those physical characteristics, namely, age, race, and sex, for which the literature has been reviewed in recent years. Speech defects have been omitted also; this is a well documented field and one in which it is difficult to isolate the somatopsychological influences from the psychosomatic and physiological. Leprosy has not been included since it is a minor problem in Western countries. We set as our problem the assembling of the widely scattered literature bearing upon the somatopsychological effects of the remaining physical characteristics.

This literature proved to be very extensive, and limitation of time necessitated further restrictions. A critical review and interpretation of the available literature on the following topics have been completed: physical size, muscular strength and motor ability, auditory impairments, tuberculosis, orthopedic disabilities, acute illness. These were selected because they are among the more important practical problems, and because they represent the main types of variation in physique, viz., normal variations in size, sensory defects, orthopedic impairments, chronic illness, and acute illness. Bibliographies of the literature of the remaining physical variations have been assembled and are included at the end of the volume.

Behavior

While all kinds of behavior are affected by somatopsychological influences, this review is focused upon those phases of behavior on which research appears to be most productive at the present time: social behavior and personality. We have omitted intelligence and education almost entirely; the literature on these aspects of the behavior of physically atypical persons has been extensively reviewed and discussed in recent years.

Bibliographical Sources

Material on the subject of this review is found in the literature of medicine, psychology, education, sociology, occupational therapy, vocational rehabilitation, vocational placement, and labor relations. In none of these is the relevant literature indexed in a way that makes it easily accessible for our purposes. This has necessitated a wide sampling of possible sources of references. It is too much to hope that we have found everything that is relevant to our problem. We have reason to believe, however, that in those areas where we have concentrated our attention we have secured a sample which gives an adequate picture of the situation.

Every language with a medical literature contains material upon the social problems of disabled and ill persons. These obviously differ from culture to culture. The comparative study of the social significance of illness and disability is such a large problem we have had to exclude it from consideration in this publication. We have confined our treatment to the cultural conditions existing in the United States and Britain. Publications from other countries have been included only if their significance is clearly not limited by local social conditions.

When this review was initiated it was intended that an important part would be devoted to the special problems of disabled war veterans. A diligent search of the thousands of publications devoted to this subject failed to discover more than a half dozen studies of the personal and social adjustment of these men. Practically all the relevant publications contain descriptions of plans and programs, discussions of administrative problems, or speculations or very general discussions about personal and social adjustment problems. It is our hope that this review will provide a background for more adequate programs for disabled veterans and serve as a stimulus to research upon their problems.

CHAPTER II

SOMATOPSYCHOLOGICAL ASPECTS OF NORMAL VARIATIONS IN PHYSIQUE

It is widely believed by laymen and social scientists that such gross aspects of physique as height, weight, strength, and motor capacity affect both social behavior and personality. Statements to this effect, such as the following, are not infrequently found in popular and professional writings in the social sciences:

> Mr. Greer is about forty years old; . . . [As a young man] he did well in school. He was well liked and studious. He was extremely short and undersized. This seems to be one reason for his great drive to succeed and get things done (61).[2] Greer wants personal success, a not uncommon trait, especially for a person who is abnormally small.

> Powerful frame! How much was Bismarck indebted to his physique, although he hardly ever came to actual tests of fist and muscle. His body and his accomplishments were identical (34).

> There are thousands crippled by infantile paralysis who have not let their awkwardness deter them. . . . It has given them, as it has Roosevelt, a tempering patience (33).

> Whole existences are determined by some bodily accident; very short men derive from their lack of height a stimulus that nothing else could afford them, since to look up in the flesh becomes an incentive to look down in the spirit. . . . The effect of a definite deformity is yet more insidious (42).

> Strong bodies, well-formed, and socially approved, predispose people [especially in youth] to develop extroverted, realistic, sociable traits; conversely, frail, malformed, or markedly atypical physiques tend [in response to social and environmental standards] to produce introverted, intellectual, or autistic personalities (1).

It is perhaps unnecessary to cite evidence for the widespread belief that the right physique will make personal adjustment easier and life happier. It is clearly apparent that much medical attention, physical education, and diet are sought not so much to relieve pain or cure illness as to achieve a physique which it is thought will make social success greater and easier. Despite the importance which laymen and social scientists attach to the psychological significance of physique, little has been done to determine systematically the extent to which normal variations in physique actually do influence behavior, and the means by which their effects are accomplished. In surveying the material which is available, the large literature dealing with constitutional type and its physiological or genetic relation to temperament has been omitted, inasmuch as we are concerned only with variations in physique that affect freedom of action, either directly by way of physical abilities or indirectly by way of the social significance of physique.

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[2] References for Chapter II will be found on pp. 303–306.

Two kinds of differences in physique may have somewhat different somatopsychological significance. First, there is the familiar *individual differences* category. The term "individual differences in physique" refers to the fact that measurements of the same structures or functions in a number of individuals produce a distribution of values. The somatopsychological problem in this connection is as follows: What differences in behavior arise by virtue of the fact that people have different physiques? Another category of physical differences may be termed *variations within the individual.* This refers to the fact that measurements of the same structures or functions in the same individual at temporal intervals produce a distribution of values. The somatopsychological problem here may be stated as follows: What changes in an individual's behavior arise by virtue of the fact that his physique changes over a period of time? We shall consider, first, data bearing on the problem of individual differences.

The Somatopsychological Significance of Individual Differences in Physique

Individual differences in physique and in behavior have been extensively investigated. In the course of this research a considerable number of correlations between physique and behavior have been reported. In most cases the research has not been directed at determining the source of the relationship but merely at describing it; so it is often difficult to separate the somatopsychological influences from the psychosomatic, the physiological, the genetic, and the sociological. Investigations of individual differences in physique and behavior having some relevancy to the somatopsychological problem are reviewed below.

Behavior of Obese Persons

Behavioral correlates of obesity in children have been reported by several investigators. Data from the reports of these investigations are given in Research Summary I on pp. 44–47 following this chapter. Before summarizing the findings of these investigations a few words on the methodology of research in this field may be in order, for in addition to their contributions to the psychology of obesity, these studies are useful guides to future investigations in the field. Some of the methodological requirements which these studies suggest follow:

Selection of subjects. Obese subjects secured from medical and guidance clinics are undoubtedly frequently selected with respect to such crucial factors as national culture, social status, economic level, and behavior difficulties; hence they may be in no way representative of the behavior of obese children in general. Future studies should carefully eliminate, or allow for, such biasing selective influences.

Elimination of concomitant variables. It is highly probable that obesity in the general population is correlated with many factors which influence behavior, e.g., socio-economic level, family pattern, cultural mores. Until these factors are known and taken into account, interpretation of an association between obesity and behavior is difficult.

Control groups. In lieu of the possibility of experimentally inducing obesity and making "before-and-after" studies, and in the absence of objectively established standards of social behavior and personality in non-obese children, comparable non-obese control groups are essential.

Observations. In view of the widely held biases and stereotypes concerning characteristics of obese persons, it is probable that the reports of parents and teachers as to the behavior traits of obese children are unreliable. Detailed observations of concrete behavior should be secured.

The findings of the studies of obesity are in full agreement on the following points:

Obese children avoid physical activity. Investigators of this aspect of behavior find that the activities of obese children are predominantly sedentary.

Obese children are sensitive to ridicule. The studies which include this item agree that obese children are frequently subject to ridicule, and that they are usually sensitive to this treatment.

There is substantial disagreement in these studies on the following points:

Social withdrawal. If the timidity and emotional and social immaturity mentioned by Bruch are behaviorally roughly equivalent to the submissiveness of Levy and Mittelmann, there is rather serious disagreement in their findings. Levy finds such behavior to be characteristic of only a particular physical type of obese child, Bruch finds it to be characteristic of obese children in general, and Mittelmann finds submissiveness and aggression to be equally frequent.

Intelligence. Those who investigated intelligence find that obese children are, on the average, more intelligent than children of normal weight, although McHale's data offer inconclusive support. However, the interpretation of this finding is in question. McHale's data upon the vocational level of parents indicate that obesity in children is more frequent in the upper socio-economic levels than in the lower. It would appear, therefore, that the intellectual superiority of obese children may be at least in part an artifact of social selection.

Source of the behavior. There is basic disagreement as to the causation of the characteristic behavior of obese children. Levy attributes it to a constitutional factor, Bruch favors psychogenic influences within the family situation, Mittelmann credits both physiological and somatopsychological influences, and Sanford et al. hazard no guess as to which comes first, the behavior or the obesity. Bruch is the only investigator to offer specific evidence respecting causation; however, the picture of parental ambivalence which she draws is very similar to that found for physically disabled children where psychogenesis is out of the question (cf. Chapter III). Other more carefully controlled and more objective studies of causation are badly needed.

We are left with the conclusion that obese children tend to be inactive, sensitive about their weight, and probably more frequently timid and submissive than non-obese children; the former are often intelligent, and frequently come from the upper socio-economic classes. At best, however, these relationships are weak, with much overlapping with normal groups. There is wide disagreement as to the source of the behavior of obese children: whether it is psychogenic, constitutional, psychosomatic, somatopsychological, or due to a combination of factors. Studies avoiding methodological pitfalls are required.

Behavior of Very Tall Persons

We have found but a single, pioneering investigation of extremely tall people. Riggs (44) collected data by means of questionnaires and interviews on the experiences of 274 men 6′ 5″ or over in height. Since these subjects were discovered by means of newspaper publicity, posters displayed in colleges, and by searching the records of physical measurements in several colleges, they can not be considered representative of tall men in general. None of the subjects was clearly a pathological case of gigantism.

In response to a question as to the physical and psychological advantages of great height, the following advantages were mentioned by tall men, but frequency of mention is not reported:

self-confidence
easy entree into conversation
ability to frighten people
ability to keep out of fights
ability to keep others respectful
dominance
resistance in jams
periscopic vision in crowds
easy identification
leadership
persuasive personality
feeling of being different in a nice way
appreciation of tall trees and long autos
elicits respect
elicits attention
causes envy
causes good-natured laughter
possible to reach high places
can look over someone's head in a mirror
able to walk fast
can dance gracefully
able to get certain jobs (osteopathy, haying, advertising)
draft exemption
can obtain basketball fellowship in college
looks well in made-to-measure clothes and in full dress
gets more clothes per dollar

As seen by friends of tall men the advantages of great height were:

many people think a tall man is big in spirit as well as stature
many women admire tall men that they can look up to

The following disadvantages of tallness were reported by tall men:

self-consciousness
wasting time with new acquaintances talking about height
failure to recognize others who easily recognize a tall man
inability to avoid creditors
inability to enter military service
elicits endless jeering remarks such as skinny, stretch, beanpole, string bean, shorty, gland trouble, freak, skyscraper, long drink of water, hand me down a match, high pocket, slim, slats, how's the weather up there

- have to stoop before sinks and mirrors
- slump in telephone booths
- squat on stools
- scarcity and meager variety of ready-made clothes, blankets and sheets
- disadvantages with standard beds, berths, street cars, buses, trains, automobiles, chairs, tables, chandeliers, closet hooks, doorways, awnings, bicycles
- disadvantage with premium insurance rates

The friends of tall men reported these disadvantages of great height:

- shyness because of conspicuousness
- consider themselves "different"
- greater responsibilities because of supposed capabilities
- more severely criticized with respect to clothes, manners and behavior
- easily spotted by salesmen
- require more food

The author believes the reactions of tall men to these special advantages, disadvantages and social pressures tend to cluster in two divergent groups: those who show an intelligent approach to self adjustment, and those who carry a chip on the shoulder. In the first group the prevailing attitude is said to be one of pride, with a frequent conscious or unconscious effort to make use of tallness vocationally and socially. The second group is described as domineering and seeking unfair advantage of others; men in this group are hypersensitive to real or fancied ridicule.

Mention is made of the existence of a dozen or more social clubs for tall men and women in the United States. The author questions the desirability of such self segregation, believing that it may increase sensitivity to height as well as the desire to withdraw from the reality of the average man's world. A number of case histories are given, the longest and most adequate being that of the author who is 6′ 7″ himself.

Although this is admittedly a fragmentary investigation, it has the great virtue of establishing a few guide posts in a rich territory. It makes abundantly clear that very tall men are in many respects in quite a different social-psychological situation from persons of normal height. The 20,000 to 40,000 very tall individuals in this country present not only an interesting theoretical problem in the psychology of adjustment, but a practical one of some magnitude as well.

Behavior of Short Persons

No investigations of the behavior of persons with short stature have come to our attention. The absence of studies of short men is interesting in view of the fact that shortness in men is frequently mentioned as a liability. Folklore, legend and accounts of famous dwarfs and giants are presented by Thompson (58). Strong (56) presents fragmentary data on attitudes of others toward short and tall men. Of his group of 2,340 adult men, 28% reported that they preferred tall men to short men, 4% that they preferred short men to tall, and 68% that they were indifferent to height of men.

Relations between Size and Social Behavior and Personality

In the preceding sections we have considered the normal *extremes* of height and weight. Here we shall present data on behavior as related to the total range of variation in physical size. Inasmuch as height and weight are positively correlated to the extent indicated by a coefficient of about .60 (20, 45), either of these measures is a rough indication of general largeness of physique in massed data. A factor analysis study by Rees and Eysenck (43) indicates that largeness of physique is an independent variable statistically as well as on the basis of common perceptual experience. The data are given in Research Summary II, pp. 47–53. The studies summarized have been rather rigorously selected from a larger number of reports giving insufficient data to permit evaluation. Frequently height and weight are included almost incidentally in studies with other primary purposes, and are consequently not presented in detail.

The weak relationships revealed are probably the most striking feature of these studies. On the basis of almost any single set of data one would be skeptical of the existence of a true relation. However, it appears to us that, taken together, these reports establish the existence of several relationships rather firmly, namely:

1. A weak, positive relation between physical size and behavioral maturity in childhood and adolescence (Gates, Stone and Barker, Sollenberger).

2. A weak, positive relation between physical size and social activity, aggressiveness, and leadership (Terman, Sanford, Partridge, Bellingrath, Sheldon, Gowin). The data of Kitson, Sommerville, and Hunter do not support this conclusion.

3. A weak, negative relation between physical size and popularity for adolescent boys and possibly for girls (Bower, Fleming).

4. A weak, positive relation between physical size and noncriminality in adults. In children and adolescents, extreme variations from average size in either direction are associated with more frequent delinquency; the association with overdeveloped size is greater than with underdeveloped size (Healy and Bronner, Burt, Hooton, Goring).

5. Correlations between measures of physique and personality inven-

tory scores are weak and inconsistent (Bender, Eisenberg, Middleton, Faterson).

Whether these relations have actual social and statistical significance, and possible sources of the relations, will be discussed after reporting data on other aspects of physique.

Relations between Motor Ability and Social Behavior and Personality

Relevant data are presented in Research Summary III, pp. 53–54. All the available studies relate to children and adolescents. From these it is clear that in boys physical strength and prowess are associated with popularity, leadership, and prestige. However, the correlations are not strong. Case studies indicate that for boys who do not possess physical prowess, such traits as daring, decisiveness, "brains", friendliness, enthusiasm, humor, and self-assurance can take the place of physical inferiority. In the case of girls the picture is not so clear, perhaps because the data are more meager. Tryon's evidence indicates that the significance of physical prowess changes from 12 to 15 years of age; at 12 physical prowess has practically no social value for girls, at 15 it has at least a compensating value for heterosexually unsuccessful girls. In any case, physical prowess has much less significance for the social behavior and personality of girls than of boys.

Beauty

Two reasons for the failure to study the behavioral significance of normal variations in physical beauty come readily to mind. One is the lack of measures of beauty, and the other is its obvious importance to the self and others in determining behavior. One need only walk past barber and beauty shops and cosmetic counters to observe evidences of this importance in the behavior of men and women. And one need only attend a social gathering to see its effectiveness in operation. Perhaps the reasoning is, why study the obvious?

Nonetheless beauty has been mentioned by some investigators. Stolz and Stolz (52) give examples of its importance in adolescent adjustment, but they add:

> . . . it must be remembered that for every example we may give of a girl disturbed because she has to wear glasses or a boy disturbed by his large, prominent nose, the reader can probably match a case with similar characteristics who gave no evidence of disturbance. Of four girls in the California study who wore glasses, three were concerned about their appearance while one showed no evidence of disturbance, nor did the fact seem in any way

to interfere with her satisfactory social relations. Of all the items mentioned, acne seems to be the only one which almost universally causes emotional difficulties for the adolescent boy or girl.

It should be recognized, however, that "good looks" changes its significance during adolescence. Tryon (60) found that for 12-year-old boys the trait "good looks" had very little prestige value, while at 15 it was an important component of a prestige-laden behavior syndrome. With girls "good looks" was among the more desirable traits at 12, while at 15 it was included in a syndrome important for heterosexual effectiveness but was almost unrelated to social success among girls.

Hardy (19) found attractiveness of appearance, as rated by adults, to be related to popularity in children of the same socio-economic levels in the elementary grades. Of the children who were consistently preferred as companions by these children, two thirds were rated by adults as having an attractive appearance, while only 20% of the consistently unpopular children were so rated; 5% of the best liked children were classified as "homely" by adults, and 26% of the unpopular children were classified as "homely."

Significance and Source of the Relationships Discovered

There is no unambiguous evidence as to the source of the relationships discovered, and hence there is little agreement among investigators. It hardly seems profitable, therefore, to review the speculations that have been made. Psychosomatic, somatopsychological, constitutional, physiological, and sociological causation have been proposed for the same findings, with what appears to be equal justification so far as the data presented are concerned. It is undoubtedly true that all may be reflected in some degree in the same data. Although little has been done to isolate the influence of these factors, enough has been accomplished to show that much more can be done. This appears to be particularly true for the somatopsychological determiners.

Social and Psychological Significance of Correlations between Physique and Behavior

Although the correlations between measures of physique and behavior indicate that the direct univocal relation is weak, even these correlations can be far from unimportant in social affairs. Society involves large populations and in some respects it is highly selective. Suppose, for example, there should exist a true correlation between size and social participation, represented by r = .15, the small individuals tending to be retiring and timid, the large ones active and socially aggressive. There would be approximately 50 persons in a city of one million adults, 3.9 sigma above the mean in social activity, presiding at meetings, promoting campaigns, etc. These people would, on the average, be 1.5" taller than the average man; only 27% of the general population would be as tall as the average leader. It is probable that such a low correlation is not unimportant and that it can be the basis of the common experience that leaders tend to be large people.

Sensitivity to Physical Characteristics

Taken altogether, however, correlational data have usually been interpreted as meaning that normal variations in physique have relatively small importance for personal and social adjustment. Actually, however, this conclusion applies only to one of several possible ways of measuring the variables involved and of investigating their interrelations. Before such a general conclusion is justified, other approaches have to be explored. Prior to considering what they may be, and how they can be studied, it may be well to turn to other sorts of data which suggest that physique has great significance for personal and social adjustment.

The fact is inescapable that large numbers of people are highly sensitive to their own and others' height, weight, motor abilities, and appearance. This perhaps does not require documentation, but a few of many possible citations will be given. Consider, for instance, the demand by an apparently not inconsiderable number of persons for shoes that will increase their apparent height. According to a full-page newspaper advertisement for such shoes (62):

> Short men find that ——— shoes remove the embarrassment of height deficiency, elevate them to the average height class and make them taller than the girls they escort. Taller men praise ——— shoes because they add new impressiveness of their appearance. . . . Sales records reveal that more men of 'medium' height have purchased these shoes than have 'shorter' men. Even 'five-tenners' who want to look like 'six-footers' look to ——— shoes for the social and business advantages of added height.

Stolz and Stolz (52) found that 7.5% of a group of 93 normal adolescent boys appeared to be disturbed by their shortness, and 13% of 83 adolescent girls showed signs of worry over their tallness. However, some equally short boys and tall girls were not bothered by their statures. At some time during their adolescence, 22% of the boys were dissatisfied with aspects of their physiques which the authors describe as "sexually inappropriate", for example, development around the nipple area, size of genitals, scanty pubic hair, fat hips, and facial blemishes.

Levy (29, 30) discussed children's own physiques with them during routine individual physical examinations and found that 18 of 20 children exhibited sensitivity or feeling of inferiority, with respect to some aspect of their physiques. One child did not cooperate, and the other had only good things to say about his body.

Jacobsen (27) analyzed the written comments made by freshmen college women upon being first introduced to their classmates. When the strange classmates were presented briefly before groups of 24 women, 24% of the spontaneous remarks referred to the physical characteristics of the strangers, 30% referred to psychological characteristics, 29% to grooming, 15% to clothing, 1% to intelligence. Of the comments on physique, 69% were favorable, 9% were neutral, and 22% were unfavorable.

Assortative mating with respect to physical characteristics has been repeatedly demonstrated. Coefficients of correlation ranging from .24 to .35 have been reported in respect to height and weight, of husbands and wives (41, 46, 47). Correlations between the weights of engaged couples of .43 have been obtained (47). If we assume a correlation of .33 between the heights of husbands and wives at marriage, two American men, one 6′ 1.5″ and the other 5′ 3.7″ would have the following expectations of marrying women of the indicated heights:

	Height of wife				
Height of man	Taller than 5′ 5″	Shorter than 5′ 3.5″	Shorter than 5′ 1.8″	Shorter than 5′ 1″	Shorter than 4′ 10.5″
6′ 1.5″	.50	.25	.09	.05	.01
5′ 3.7″	.25	.75	.50	.37	.09

In other words, one's size in some degree influences one's choice in marrying.

Published case studies almost invariably, and irrespective of the viewpoint of the clinician, include information upon the gross physical characteristics and appearance of the patient. In many cases normal variations in these respects are considered to be essential factors in the behavior difficulty. Such analyses of cases have been published, for example, by Healy and Bronner (21) and Blos (4).

Evaluation of the Adequacy of Correlational Procedures for Study of the Problem

This is enough to indicate that there may be relationships between physique and behavior which are not revealed by the correlational methods usually employed when this question is raised. Let us turn, therefore, to a consideration of why the usual correlation techniques may have failed to indicate the true situation. There are several reasons why this may be so:

1. Physique has a variety of significances. It is probable that some of these significances are opposed to others and that in massed, heterogeneous data the relationship existing for one portion of the data will be masked by a different relationship in another portion. Suppose, for example, a forester was interested in the relation between altitude above sea level and the height of trees, and that he made measurements in a mixed forest of deciduous and coniferous trees. He might find that up to 7,000 feet no relation existed when he considered "trees" in general, while actually for the conifers there might be a significant positive correlation with elevation, and for deciduous trees a significant negative correlation with elevation. In the case of physique and behavior, we know of a number of independent influences (psychosomatic, genetic, somatopsychological, physiological, and sociological) that enter to produce the final correlations, and there is no reason to believe that these factors operate in the same degree, or even in the same direction.

2. A somewhat similar reason lies in the fact that physique is always one among many factors determining behavior, and unquestionably in some situations it is of minor influence relative to other determiners operating. Thus although it is demonstrably true that physical size does, on the average, influence the size of the person one marries, other factors such as wealth, interests, propinquity, religion, race, and vocation are so strong in particular cases that the influence of size has no observable effect upon behavior. Unless these "other" factors are experimentally or statistically eliminated or held constant, existing relations between physique and behavior will be exhibited in an attenuated form.

It is recognized that the discovery of a correlation does not determine the source of the existing relationship. It is equally true that the absence of correlation in massed data does not mean that lawful interdependencies between the variables do not exist. It may only mean that not enough insight or discrimination has been achieved to define or measure the relevant variables, or control or eliminate the irrelevant ones.

3. It must be recognized that the measurements of behavior in the studies reported are crude, and perhaps not sufficiently reliable or valid for the problems under consideration. It is also true that they represent only a small number from the totality of behavior characteristics which may be relevant.

4. Even more serious is the fact that the behavior characteristics studied are all superficial, symptomatic, or "phenotypic" behavior. Popularity, leadership, behavioral maturity, timidity, delinquency, pleasing personality, dominance, and sociability are undoubtedly each the outward expression of very diverse inner "genotypic" conditions. The same inner conditions may give rise to different behavior, and the same behavior may arise from different inner conditions. If great height sometimes gives rise to insecurity, as Riggs suggests, this may lead to either aggressive or submissive behavior. Under these circumstances the correlation between height and submissiveness is bound to be low. Behavior such as this is related to the pychological conditions as the cough, the rash, and the fever are related to the basic disease conditions. One would not expect to obtain high correlations with variables of these sorts.

5. Equally serious is the fact that these studies examine physique in terms of physical units of measurement, while the major interest is usually in studying its psychological significance. It is certain, for instance, that there is not a one-to-one relation between the physical dimensions of a man and his perceived size. It is much more likely that there are only a few intervals, e.g., small men, medium men, large men, with the transition points varying from observer to observer. The relations between physical dimensions and such a psychological dimension as "physical impressiveness" may be very complex. We may speculate that some relation such as that represented in Figure 1 may hold. If some such relation does exist, it is obvious that correlations between physical measures of size and the social effects of size are bound to be low.

The entire history of correlations between behavior and nonpsychological variables is disappointing, and the results are often at variance with the experiences of clinicians. Studies of birth order, only children versus children with siblings, urban versus rural residents, poor versus wealthy persons, etc. have failed to reveal striking differences in personality. Again, this would appear to be due to the failure to get beyond the level of arithmetical, geographical, or financial concepts to the psychological significance which lies (often in highly complex ways) behind these nonpsychological concepts. It is, perhaps, worth noting that the reverse procedure of using psychological categories in studying physical phenomena is also unsatisfactory. Correlations between the "smell" or "feel" of the air and weather conditions are not reliable; a barometer works better.

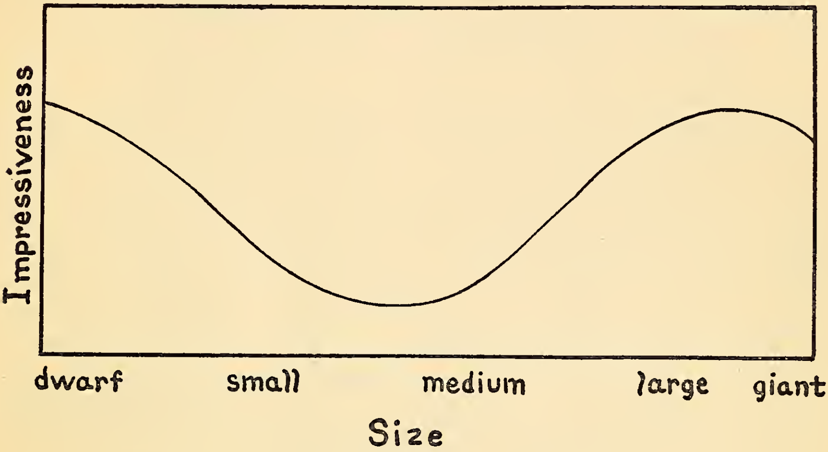

FIGURE 1

Schematic Representation of a Possible Relationship between Physical Size and Impressiveness of Physique

We arrive at this conclusion, therefore: while there is evidence of weak relationships between physical measures of physique and personality and social behavior (relationships that are by no means negligible), methodological shortcomings make it doubtful if this is a true picture of the situation. We are inclined to give more weight to such indirect and nonobjective evidence as the sensitivity of laymen to physical characteristics, and clinical case studies which indicate that normal variations in physique can have tremendous influence upon behavior.

The great need, as we see it, is to find means of measuring physique and behavior in psychologically meaningful units. Although this will be a long and difficult problem, a beginning can at least be made. In the following section we present an analysis which we consider to be in the direction that progress will occur. This discussion is in the particular context of the problem of variations within the individual but it will be obvious that the analysis applies to the problem of individual differences as well.

THE SOMATOPSYCHOLOGICAL SIGNIFICANCE OF VARIATIONS IN THE INDIVIDUAL'S PHYSIQUE

Many studies of the parallel course of physical and behavioral development have been reported, but few investigators have related the two, or reported data in such a way that interrelations can be determined. Case studies frequently mention the importance of crucial developmental changes in stature, strength, or motor control for a child's adjustment; but usually in such cases the evidence is not unambiguous.

On this subject, rather than reviewing again the well-known studies of behavioral and physical maturation, it seems best to present a theory of their interrelationship based upon well established facts. What we have to say applies particularly to early adolescence, but it will be clear that this significance is much wider. The concepts to be used are applicable to the somatopsychological effects of a great variety of physical characteristics at all ages, as will be pointed out in succeeding chapters.

It is possible to make the following general statements about the physical status of children in early adolescence:

1. In stature, strength, and motor control, children are approaching the status of adults; they are still, however, intermediate between adults and less mature children in these respects (49).
2. Changes in these aspects of physique are occurring at a rapid rate both absolutely and relatively (49).
3. Differences between individuals in these respects are greater than at any time before or later (49).
4. There are great differences in the degree of maturity of body segments (53).

These physical characteristics of the adolescent affect his psychological situation profoundly by placing him in new and overlapping situations (32). We shall first discuss the psychological significance of new situations.

New Situations in Adolescence

Many new behavior possibilities are presented to the adolescent for the first time, because:

1. He has the physical size, strength, and coordination to carry them out.

Examples: A boy can swim the lake; he can handle a truck or tractor. A girl can wear adult clothes; she can perform the skills required for a job in the cannery.

2. He possesses the physical symbols which the culture requires for admission to many adult activities.

Examples: A boy who looks like a man can get a man's job; he can gain admittance to a public dance hall. A girl who looks like a young lady can have a date with a college boy; she can clerk in the ten cent store.

Although the transition to adult-like activities is gradual in many cases, an industrial urban culture appears to accentuate the suddenness of important transitions in childhood and adolescence. Without doubt, however, in all cultures adolescence is the time, par excellence, of important new experiences.

It is, of course, true that because of the adolescent's physique some activities are now closed to him. He cannot ride a tricycle; he cannot go to the movies for ten cents. But this is not often experienced as a restriction; for a fundamental aspect of the child's and the adult's situation is that, by and large, adult activities have a higher attractiveness (valence)[3] than activities open only to children. In our culture children occupy an underprivileged minority status in which very many highly desirable activities are closed to them, e.g., driving automobiles, buying things at stores, staying up at night. One of the important factors that determines when a child shall be admitted to these privileged regions for the first time is his physique, operating, as noted above, by making some activities physically possible for the first time, and by satisfying socially established physical entrance requirements.

The culture enforces these physical requirements for participation in privileged activities in formal and informal ways. In the case of formal requirements, chronological age is of especial importance in our society. One's birth certificate is a prized possession. In one community, for example, some age tests in childhood and adolescence are as follows:

5 years: admitted to kindergarten
6 years: admitted to first grade
14 years: permitted to drive automobile with adult present
15 years: marriage allowed with consent of judge and parents; permitted to cease school with consent of school superintendent and parents
16 years: permitted to do part time work during school hours with consent of school superintendent and parents; allowed to drive car with parents' consent; marriage allowed with consent of parents
17 years: may join the Navy
18 years: permitted to stop school; may marry without consent of parents; may stay out at night after ten-thirty week nights; may buy cigarettes
21 years: may vote; may buy liquor.

[3] Valence is defined as the characteristics of objects and behavior possibilities that cause a person to approach or withdraw from them; on a conscious level this is experienced as attractiveness (positive valence) and repulsiveness (negative valence).

Certain restrictions and coercions are also age graded:

5 years: free admittance to public transportation and theatres denied
6 years: freedom not to go to school denied
12 years: half rates on public transportation and theatres denied
18 years: subject to military draft.

In general, however, increasing age brings increasing freedom to engage in privileged activities.

Various social groups set up other formal physical tests for admission to prestigious activities in childhood and adolescence. Height and weight requirements for admittance to athletic teams and competitions are especially important to boys in early adolescence.

Of perhaps even greater significance for the psychological situation of children and adolescents are the informal, unconscious pressures exerted upon them by adults and by their fellows in accordance with their degree of physical maturity. There are widely accepted behavior expectations for children of differing degrees of physical maturity. As the child appears more and more mature, these expectations result in a relaxation of restrictions upon participation in prestigious activities. This may be illustrated by the expectations of parents and teachers for the two pairs of girls shown in Figures 2 and 3.[4]

Each pair of girls is of the same chronological and mental age, in the same grade, and from the same socio-economic background. The girls of each pair differ greatly in physical maturity, as can be seen from the photographs. The parents and teachers of each girl were asked to judge which of a list of activities they considered proper for the girl to engage in. The judges did not know the purpose of the study; they were given the impression that it was a study of parents' and teachers' standards of discipline. The results are given in Table 1; an x indicates that the judge considers the child sufficiently mature for the behavior mentioned in the column at the left. It should be kept in mind that these judgments represent the expectations of important adults in the life of each girl. These expectations are doubtless translated into social pressures upon the girls to behave in accordance with the adult's expectations.

The physically more mature girl of each pair is judged to be behaviorally mature enough for adult-like activities more frequently than the physically less mature girl.

While it would be highly desirable to have more confirmatory research,

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[4] These data are part of an unpublished investigation supported in part by the Committee for Research in Problems of Sex, National Research Council, and done in collaboration with Dr. Eugenia Hanfmann.

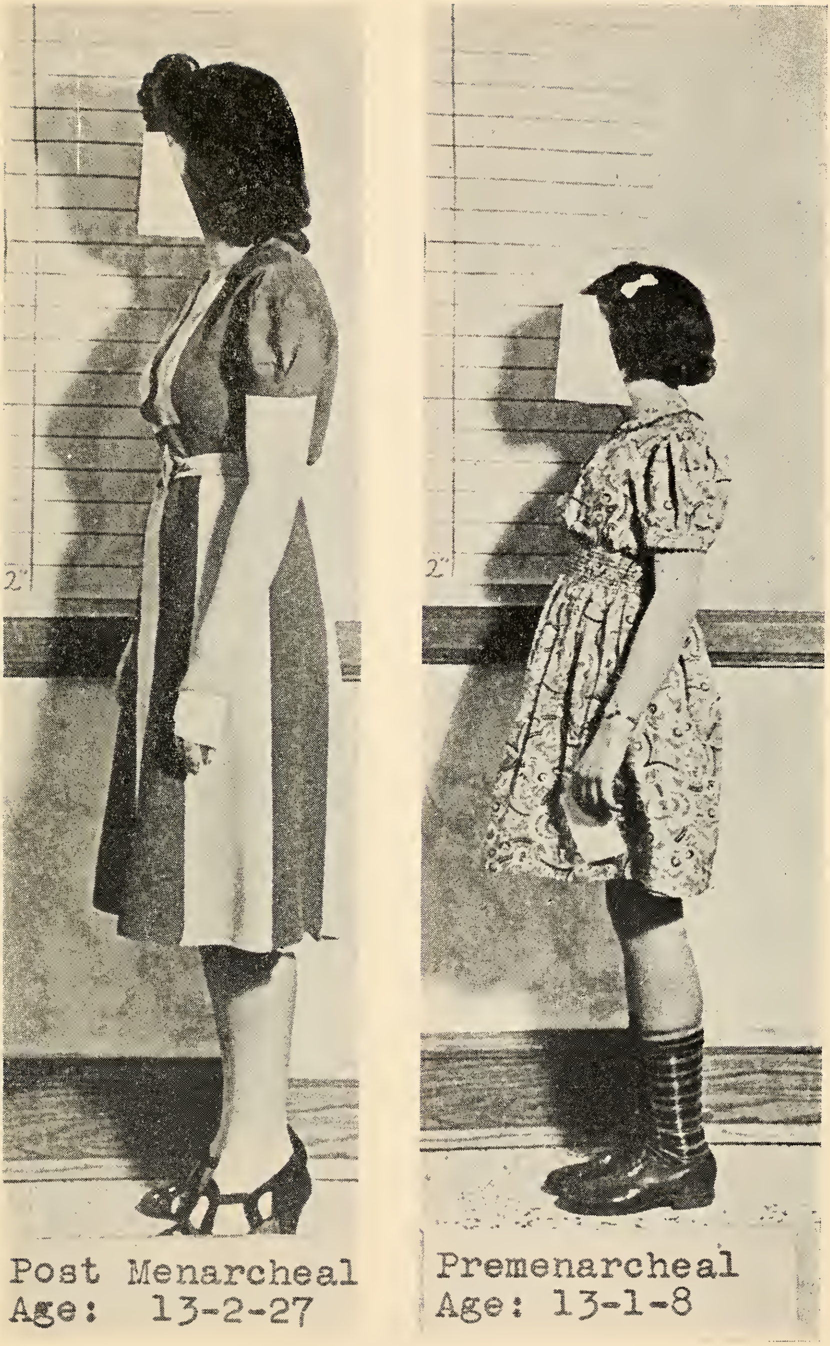

Figure 2

Physically Mature and Immature Girls of the Same Chronological Age; Girls *H* and *P* (Table 1)

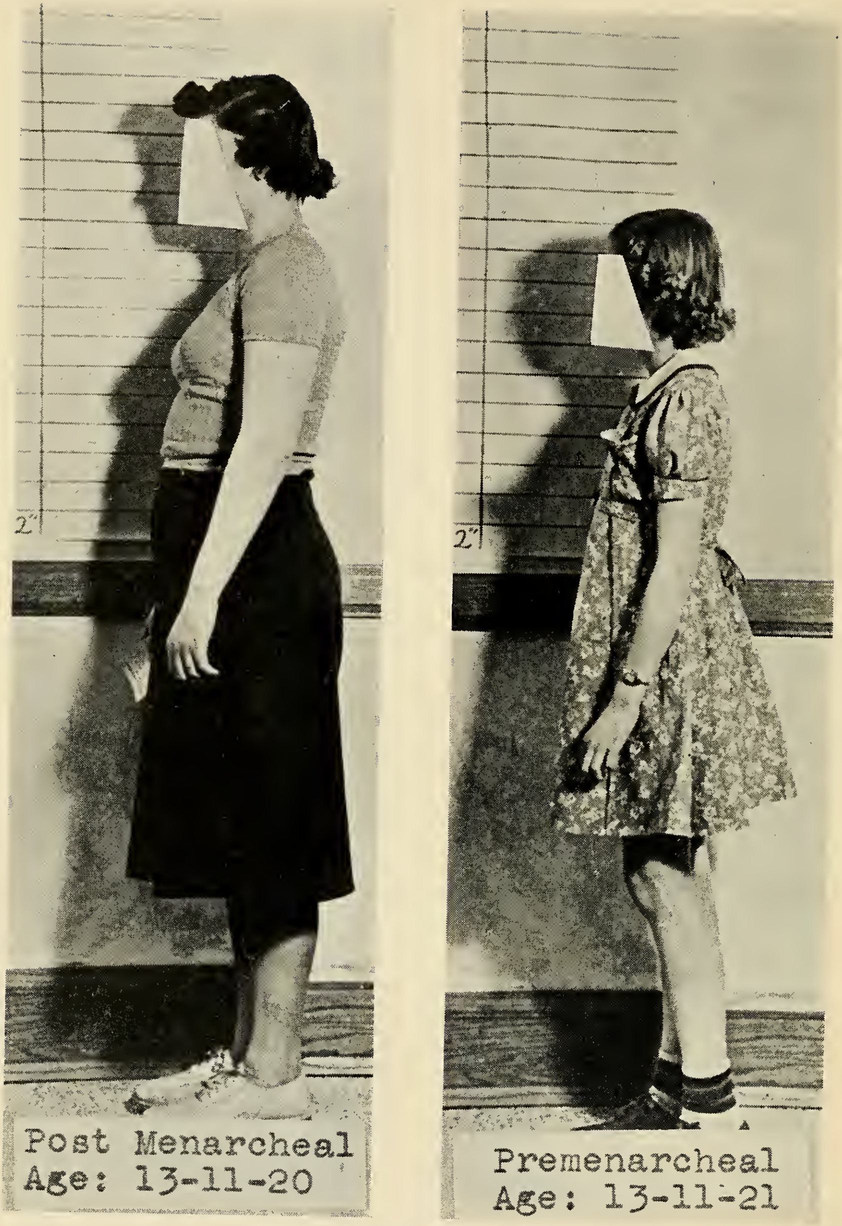

FIGURE 3

Physically Mature and Immature Girls of the Same Chronological Age; Girls *S* and *M* (Table 1)

TABLE 1

ADULT JUDGMENTS OF SOCIAL MATURITY OF TWO PAIRS OF GIRLS *

	Pair I									Pair II							
	Child H Judges				*Child P* Judges					*Child S* Judges				*Child M* Judges			
Activities judged	A	F	T†	T	M	F	T	T†	T	M	T	T	T†	M	F	T†	T
1. Go to movies alone..................					x	x	x	x	x	x	x			x	x	x	x
2. Attend dances unchaperoned.........							x	x	x		x					x	x
3. Not play "house"...................					x		x	x	x	x	x		x	x	x	x	x
4. Conduct class recitation.............					x			x	x	x				x	x	x	x
5. Buy school dress....................	x				x	x		x	x	x	x	x	x	x	x	x	x
6. Stay alone over night................								x	x		x					x	x
7. Play bridge						x	x	x	x	x	x		x	x		x	x
8. Decide how to wear her hair........	x	x	x		x	x		x	x	x	x	x	x	x	x	x	x
9. Teach SS class of younger children....	x					x		x	x					x	x	x	x
10. Go out with boys..................						x		x	x							x	x
11. Not receive physical punishment......	x			x	x	x	x	x	x	x	x		x			x	x
12. Overnight camping trip.............	x	x	x		x	x		x	x	x	x		x	x	x	x	x
13. Buy winter coat..................					x	x					x					x	x
14. Not enjoy playing on "slide"........							x	x			x					x	x
15. Participate in adults' conversation.....	x					x		x	x	x	x		x	x	x	x	x
16. Not wear ¾-length sox.............					x		x		x					x	x	x	x
17. Plan and conduct party..............	x					x		x	x	x	x	x	x	x	x	x	x
18. Run household for a day............						x	x	x	x	x	x		x	x	x	x	x
19. Decide what movies to go to.........	x	x	x		x	x		x	x	x	x	x	x	x	x	x	x
20. Choose her own friends.............	x	x	x		x			x	x	x	x	x	x	x		x	x
21. Not play "London Bridge"..........					x		x	x	x	x	x	x	x	x	x	x	x
22. Wear high heels....................						x		x	x						x	x	x
23. Evening party at friend's............	x	x	x		x		x	x	x	x	x		x	x	x	x	x
24. Deecide how to spend $5 gift........					x	x		x	x	x	x		x			x	x
25. Not wear "little girl" dresses.........					x	x	x	x							x	x	x
26. Pluck eyebrows								x	x					x	x	x	x
27. Social engagement alone at night.....								x						x	x	x	x
28. Use rouge and lipstick..............						x		x	x					x	x	x	x
29. Decide what to wear to party........	x				x	x	x	x	x	x	x	x	x		x	x	x
30. Use nail polish.....................			x			x	x	x	x	x			x	x	x	x	x
Total, mature judgments...........	11	5	6	1	16	19	13	28	26	18	21	7	16	20	21	30	30
Mean	6				19					15.5				25			

* x indicates that the judge considers the child sufficiently mature for the behavior indicated.

F = father of the girl
M = mother of the girl
T = teacher of the girl
T† = same teacher for each of the pair
A = aunt with whom *H* lived

there would seem to be little doubt that the physique of adolescents operates to change their psychological situation by opening to them many important new regions of behavior. In trying to understand the somatopsychological significance of physique in adolescence, our question then becomes: What is the nature of new psychological situations, and what kinds of behavior do they require?

Properties of new psychological situations. On the basis of our own experience in new situations and of our observations of the behavior of others, as a first approximation we shall define such a situation in the following terms: A new psychological situation is one in which

1. The directions are not known.
2. The valence is simultaneously positive and negative.
3. The perceptual structure is unstable.

These characteristics of a new situation may be illustrated as follows: 1) A person on thin ice is clearly in a new and important physical-geographical situation, and here, a) the directions are not known, i.e., he does not know the sequence of steps required to attain solid land; b) each next step has both positive and negative components, i.e., it is potentially advantageous in that it may take him nearer to safety, and it is potentially dangerous in that it may take him into disaster; c) his perception of the situation continually changes, i.e., slight cues have to be relied upon to indicate the strength of the ice and, as his position changes, the importance and significance of these cues also change. 2) A person immediately after being introduced to his new employer, with whom he wishes to be on good terms socially, is in a new and possibly very important social situation. Here a) the sequence of possible social actions that will gain the superior's approval is not known; b) each action may be approved or disapproved by the superior; and c) with each interchange the employer reveals first this and then that aspect of himself, and the employee's perception of the social situation continually changes accordingly.

To carry the definition further, we may amplify the three characteristics mentioned above as follows:

1. Directions unknown: the sequence of actions that will result in a desired effect (goal) is not known.

2. Valence simultaneously positive and negative: each act may place one closer to the goal (positive) or remove one further from the goal (negative).

3. Perpetual structure unstable: the pattern of the stimulating field is

not definite and unambiguous, but continually changes in important ways with small changes in the viewpoint or motivation of the person.

These characteristics of a new situation are not independent. "Directions unknown" is fundamental; "valence simultaneously positive and negative" and "perceptual structure unstable" are special cases of "directions unknown." They have different implications for behavior, however, which makes it desirable to treat them separately.

From these definitions, certain characteristics of behavior in new psychological situations can be immediately derived:[5]

1. Derivations from the characteristic "directions unknown":

a. Behavior will not be parsimonious; it will not follow the shortest path to the goal. The person will continue in a line of action only until it is clear that he is not coming closer to the goal. By chance, it is possible that in a new situation the first line of action will lead to the goal, but usually wandering, exploratory, trial-and-error behavior will occur.

Examples: A verbatim record of a conversation between a five-year-old and a reluctant, new acquaintance follows:

"I have a cowboy suit."
(No response.)
"Do you want to see my cowboy suit?"
"Huh uh." (Negative response.)
"It has chaps."
(No response.)
"Would you like to see the chaps?"

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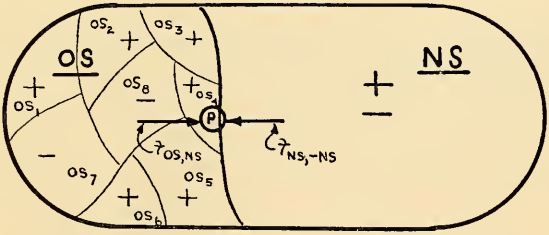
[5] In line with the conviction of the authors that an adequate theoretical structure and conceptual clarity are among the most urgent requirements of the somatopsychological problem, we will present spatial representations of some of the basic situations following Kurt Lewin (32). We present these in footnotes in order that the reader who is not concerned with these technical psychological problems may not be impeded in following the general text.



New Psychological Situation

OS = old situation
$OS_1 \ldots OS_8$ = subregions of OS
NS = new situation without stable subregions

$f_{OS,NS}$ = force in OS toward NS
$f_{NS,-NS}$ = force in NS away from NS
± = simultaneous positive and negative valence
P = person

"Huh uh."
"I even have pistols—a set of them."
(No response.)
"Would you like to see my pistols?"
"Huh uh."
"That's my dog. His name is Mike."
(No response.)
"Do you want to pat him?"
"Huh uh."
"He's my dog. My sister has a cat."
(No response.)
"Do you want to see my sister's cat?"
"Huh uh."
"This is a kind of spear. I'll throw it to you and you can throw it back." (He does.)
(No response.)
"Would you like to see me do a trick on the swing?"
"Yes."
(They walk over to the swing together.)

b. Errors, false steps, radical moves will be made at the very time the person is being most cautious. This dual aspect of behavior in a new situation, namely basic caution with superficial extremism, is one of its characteristic aspects. It arises from the fact that the consequences of the next step are never known until the step is taken.

Examples: Humor is full of instances of behavior in situations where the results of an action are quite the opposite of the intentions of the actor; e.g., a Chinese student in the U. S. bidding good-bye to his hostess with great dignity: "I have had a very pleasant evening, sir or madam, as the case may be."

At the very moment the wrecked seaman on an unknown shore is searching most carefully for food and shelter, he walks away from the only settlement.

c. Frustration will occur. The unknown presents a barrier to locomotion toward a goal. Consequently, the emotionality and behavior disruption that results from frustration will be common.

Example: The person who borrows a friend's car for an urgent trip and cannot find the starter switch will show emotionality in some form.

2. Derivations from characteristic "valence simultaneously positive and negative":

a. The person in a new situation will be in a state of conflict; he will attempt to withdraw and to advance at the same time. If the situation is of sufficient importance numerous secondary effects of this conflict will occur in the form of emotional behavior disruptions.

Examples: A dog, upon discovering a strange animal, will circle at that "safe" distance where approach and withdrawal tendencies balance.

A person on thin ice will desire to remain in his temporarily safe position, and at the same time to move toward the shore.

b. The person will alternately advance and retire as the balance of the positive and negative components shift.

Examples: The dog will approach and withdraw as he circles the strange animal.

The man on the ice will leave and return to his safe position until he finds an equally safe or safer place.

c. Behavior will be cautious, and the individual will be alert to every cue. Because of the opposing forces he can neither advance nor withdraw freely and rapidly; rather he will "feel his way along" being sensitive and alert to any evidence of the success or failure of each step. In a social situation, there are several ways to be cautious, namely: a) One may be self conscious, that is, sensitive to the impression one is making upon others (to the reactions of others to oneself as stimulus). b) One may put forth a bold front; by exaggerating the behavior that will mark one as belonging to a particular social group, one avoids the danger of being regarded as an outmember. Such behavior sometimes takes the form of extreme antagonism against out-group members. This is apparently an excellent way of enhancing one's own security. c) One may be unexpressive, inhibited, retiring. This is a kind of psychological encystment by which one becomes inconspicuous and unimportant.

3. Derivations from characteristic "perceptual structure unstable":

a. Behavior will be vacillating and unstable; it will shift as the perception of the situation shifts.

Example: In purchasing a new suit one's first impression may be unfavorable, shifting to favorable when one tries on the coat, becoming doubtful when one looks in the mirror, etc.

b. Behavior will be easily influenced, easily led. Small cues will be relatively very important. A person will have little resistance to suggestion.

Example: Explorers of a river tie up their boats and investigate on foot when they hear a sound like that of a waterfall. It turns out to be the wind in a poplar grove.

If these definitions of the properties of a new psychological situation are correct, the derived behaviors should characterize persons of all ages in every kind of new situation. We believe this is easily demonstrated to be the case. Adult emigrants and socially mobile persons, for example, as well as adolescents are frequently placed in important new psychological situations. Case studies of such persons reveal that they frequently exhibit the behavior mentioned.

It should be emphasized that not all adolescents, emigrants, and socially mobile persons will exhibit behavior characteristics of new situations. Obviously, adolescence, migration, and social mobility are not psychological categories but chronological or social categories. There happens to be a considerable association between them and the psychological concept of newness. However, the association is not complete, and there are persons in all these categories who are not in new psychological situations and will therefore not exhibit the derived behavior. Every case has to be diagnosed individually. We cannot present the data here to prove this thesis; the case sketch at the end of the chapter, however, will illustrate the behavior described.

Overlapping Situations in Adolescence

We have suggested that the physical growth of the adolescent has a somatopsychological effect upon his behavior by frequently placing him in important new psychological situations. This occurs because the rapid change in his physique in the direction of maturity makes it possible for him, or requires him, to engage in adult-like activities for the first time. We have suggested that physique by way of this factor alone may have widely ramifying effects upon his behavior.

However, this is not the only somatopsychological effect of physique in adolescence. In addition to the great increase in size and strength of physique in early adolescence, there is a crucial inharmony and heterogeneity also. The body parts and characteristics and functional properties do not mature evenly (53). A girl's figure may appear more mature than her childish laughter. The change in a boy's voice may lag behind his development of beard. The child we know to be 13 years old may look like an 18-year-old, and vice versa. A boy as large as his father may require the sleep of a child. Although such inharmonies are not peculiar to adolescence, they are of especial importance at this age because of the enchanced social and psychological significance of physique.

The somatopsychological significance of this aspect of physique lies in the fact that it frequently places the adolescent in an ambiguous situation. On some occasions the child and others will react to his childish physical attributes, creating a situation requiring childish behavior, e.g., "Of course, you're not big enough to handle a motorcycle." On other occasions the same persons may respond to the adolescent's more adult physical characteristics requiring adult behavior; e.g., "You're not a child. Get out here and shovel the snow." On some occasions his behavior will be directly determined by the adult aspects of his physique, e.g., he will be able to begin a hike carrying a fifty pound pack. On other occasions it will be determined by the childish aspects of his physique, e.g., his fatigue will become so great he will have to stop or leave his pack behind. Some persons may be consistently sensitive to the childish aspects of the adolescent's physique and bring pressure for childish behavior, while others may consistently respond to the adult physical characteristics of the adolescent and regularly bring pressure for adult behavior. The appearance of the adolescent sometimes will not be in harmony with his physiological maturity; a mature appearing adolescent may have a child's tolerance for tobacco or alcohol, or a childish resistance to fatigue. Finally, the rapid change in the adolescent's physique frequently brings about a swift change in his psychological situation; he will become adjusted to one social situation only to find that its foundation has shifted beneath him and that he is confronted with a yet newer situation.

Properties of overlapping situations. This aspect of the adolescent physique frequently has an effect on his psychological situation which we would conceptualize in terms of the construct of overlapping situations. A unit of behavior, whether it is as short as a reflex or as long as "getting an education" has its complex set of determiners. An action, and the determiners which initiate and guide it toward completion, we shall call a psychological situation. It is obvious that every person at every moment is in a multiple set of such situations. He is in overlapping situations.

For the adolescent, the overlapping situations of childhood and adulthood are paramount. Adolescents, by virtue of their frequently ambiguous and rapidly changing physiques, are often placed in marginal situations with the physiological, social, and psychological behavior determiners of both childhood and adolescence acting upon them simultaneously.

In American society there is a child culture and an adult culture. There are ways and goals of behaving which are accepted as appropriate for children, and quite different ways and goals of behaving which are considered appropriate for adults. There are correct ways for children to eat, sleep, dress, talk, and work, for example, which are different in many respects from the ways that are correct for adults. This differentiation in the behavior of children and adults reflects their different situations; and as we have suggested above, one factor determining the situation is the physique of the individual. We assume, then, that the physique of the adolescent, because it partakes of both child and adult social and physical attributes, helps to place him in an overlapping situation of childhood and adulthood.

Our problem is to derive that behavior of adolescents which is attributable to this aspect of their situation. In doing this, we shall propose one general and several particular hypotheses. We shall begin with the very general hypothesis that in American culture children have the position of an underprivileged minority group who, by virtue of the physical restrictions on their behavior and the social pressures of the adult majority, are excluded from some of the satisfactions enjoyed by the majority.

If we may use cultural examples, we may think of infants as primitives who know only the laws and customs of their immediate group. Preschool children, by this analogy, are natives who live contiguous to and have commerce with neighboring cultures, but who are still univocally obedient to their own laws and customs. School children are a subject people who live in close proximity to a complex, wealthy, dominant culture, which paternalistically sends emissaries to teach about the good life, but which benevolently allows the native laws and customs to prevail temporarily in most areas of living.

Adolescents are a semi-independent, colonial people, subject to two authorities, with some social behavior initiated and guided by native rules and customs, and other behavior governed by the laws and edicts of the higher power. The line demarking the sovereignty of the local and the higher authority is not clear and is continually changing, and there is an important area of affairs where joint jurisdiction prevails.[6]

We should like to discuss five aspects of such overlapping situations, namely: their relative consonance, potency, and valence, the nature of the barriers, and the extent of common parts.

a. *Consonance.* Two or more overlapping psychological situations may require behavior that is more or less congruent. At one extreme are

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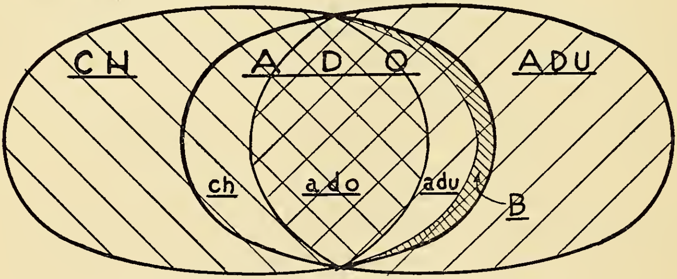
[6] The overlapping adolescent situation is represented below:



Overlapping Adolescent Situation

CH = child's situation (behavior and its determiners)
ADU = adult's situation (behavior and its determiners)
ADO = adolescent situation (behavior and its determiners)
ch = subregion of ADO where child's situation is identical with adult's situation
adu = subregion of ADO where adult's situation is identical with child's situation
ado = subregion of ADO where adult's situation and child's situation are interfering or antagonistic
B = barrier region separating ADO and ADU

situations where the actions required to achieve different ends are practically identical. Such is the case, for example, with situations corresponding to the behavior of "having an enjoyable game of handball" and "getting a good work-out"; or "avoiding high taxes" and "contributing to a worthy cause." We shall call these overlapping *identical* situations.

Other overlapping situations are not identical, but are consonant in their common parts. Thus, the behavior of "going to lunch" and "seeing my friends," or "going on a business trip" and "seeing the country" is neither identical nor antagonistic. The behavior resulting from one set of determiners does not interfere with the entirely different behavior deriving from the other set of determiners. The situations determining two such units of behavior are therefore completely consonant. We shall call these, overlapping *consonant* situations.

Another type of relationship between overlapping psychological situations may be illustrated by the determiners of the behaviors of "eating breakfast" and "reading the paper." In this case the behaviors are not completely consonant. When a person is in both of these situations simultaneously, the behavior determined by each situation is modified by the other situation but neither is completely disrupted. Both behaviors may be carried on simultaneously, though the efficiency of each is impaired. We shall call these, overlapping *interfering* situations.

A fourth type of relationship occurs when overlapping situations require mutually exclusive behaviors. Thus the person simultaneously in the situations of "reading the paper" and "conversing with my wife" is required to carry on behaviors that, for the most part, do completely interfere with each other. Such overlapping situations give rise to conflict. The only adjustment possible is a rapid oscillation between the antagonistic behaviors, or withdrawal from one or both situations. We shall call these, overlapping *antagonistic* situations.

It is clear that these types of overlapping situations are not distinct, but represent points along a continuum from situations leading to identical behaviors, to situations requiring completely antagonistic behavior.

Of especial frequency and importance are the last two kinds of overlapping situations—situations that to some extent modify, and to some extent prevent the behavior required by the other. We shall call such overlapping situations, *marginal* situations. Many adolescents and also disabled persons in American culture are in such marginal situations.

b. *Potency*. In addition to differing in the relative degree of consonance of the behavior they determine, overlapping situations differ with respect to their relative potencies. If we should represent the influence of all the situations acting upon the person at any instant by the quantity 10, we could represent the influence of particular situations by appropriate smaller values in proportion to their relative influence. The influence of one situation relative to all simultaneously acting situations we shall call the relative potency of the situation. The behavior resulting from overlapping situations will depend not only upon the relative consonance of the situations, but also upon their relative potencies. A person in the overlapping situations of "reading the paper" and "conversing with my wife," in which the latter situation is of relatively higher potency than the former will predominantly converse with his wife, with perhaps an occasional glance at the headlines or a slight feeling of annoyance. As yet, we do not know in detail the way in which these variables combine to influence behavior. It is obvious, however, that the relative potencies of overlapping situations are frequently in flux, giving rise to great variability in behavior. The potency of the "child" and "adult" situations in the life space of adolescents varies greatly from individual to individual. This seems to be one of the important factors in the adolescent's adjustment.

c. *Valence.* A third important variable in overlapping situations is their relative valence (desirability). Both situations may be negative (e.g., the situation of "going to the dentist" overlapping with that of "having a toothache"); both may be positive (e.g., the situation corresponding to "reading the paper" overlapping with that of "conversing with my wife"); one may be negative and the other positive (e.g., the situation of "tiring trip" and that of "going home"). In the case of the adolescent, the regions open only to the adult are generally of higher valence than those common to both children and adults; and the behavior possibilities open only to children are from the adolescent's viewpoint often neutral or of negative valence. Of particular importance in this respect, undoubtedly, is the possession of symbols entitling one to belong to the privileged group, whether or not one engages in the privileged activities.

d. *Barriers.* A fourth characteristic of overlapping situations is the nature of the barriers. The barrier between adolescence and adulthood is determined partly by the behavioral limitations of the individual adolescent, and partly by social pressure from adult persons and other adolescents. In general, this barrier must be represented by a region within indefinite boundaries through which the individual adolescent can make some, but strictly limited, progress.

e. *Extent of common parts.* The last characteristic we should like to mention is the extent of the part common to the overlapping situations. This may vary from a high extent of commonality with adults in the case of large adult-appearing adolescents, to a low extent in the case of small, immature adolescents.

These variables will differ from adolescent to adolescent. Some frequent combinations and the resulting behavior are as follows:

Condition 1. The child and adult situations are of approximately equal potency and both are of positive valence.

Derivation: The adolescent will attempt to behave in accordance with both sets of determiners simultaneously.

a. If the situations are interfering, behavior with both childish and adult characteristics will result.

Example: A 13-year-old girl dressed in her first "grown-up" evening dress claps her hands and skips about the room in delight.

b. If the overlapping situations are antagonistic, conflict with emotionality and anxiety will ensue.

Example: A boy with a man's job that is too difficult for him does barely satisfactory work with great fatigue, boyish pranks and unreliability; the conflict between the satisfaction of being accepted as an adult, and the fun and freedom of a child may be very great.

Condition 2. The relative potency of child and adult situations is continually shifting due to changing social pressures and fluctuating physiological conditions.

Derivation: Great changes from childish to adult behavior will occur.

Example: Boys' club meeting begins with great seriousness and dignity, but ends with a roughhouse.

Condition 3. The child and adult situations are of approximately equal potency; the valence of adult activities is negative, that of child activities positive. This situation may arise with children whose childhood situations are protective and rather limiting, and with those whose physical development is retarded but whose chronological and scholastic development forces adulthood upon them. The negative valence of adulthood will be due partly to its great unfamiliarity.

Derivation: Child behavior is exaggerated and adult behavior resisted; conflict results.

Examples: Boy avoids shaving even when the need is apparent to others; girl refuses to have inappropriate, childish hairdress changed; student prolongs school career, and thus avoids facing problem of vocation.

Condition 4. Child and adult situations are of approximately equal potency; the valence of adult activities is positive, that of child activities negative. This situation may arise with children whose childhood is hard and who are early thrust out to fend for themselves.

Derivation: Adult behavior is exaggerated, child behavior avoided. The vacillating, extreme behavior deriving from the "new" adult situation occurs frequently and is often delinquent. This is undoubtedly one reason for the association of delinquency with low economic status.

Examples: The adolescent who strives to pass as an adult, before he is easily able to do so, by exaggerating any behavioral symptoms of adulthood he can exhibit, e.g., girls who wear adult clothes and cosmetics and go with older boys; boys who engage in "masculine" conversation, and who get jobs and have money of their own.

Condition 5. The adult situation is of greater relative potency and positive valence, though it also has clear negative components, arising largely from its newness. This situation may arise when the automatic, biological maturity of the individual forces him into new, highly important adult situations.

Derivation: The behavior previously considered under new psychological situations is to be expected here. That it can easily take the form of delinquent behavior is obvious. This is undoubtedly one basis for the more frequent delinquency of "overdeveloped" boys and girls.

In the following record, each unit of behavior of an adolescent in the concrete situations reported is subsumed under one of the concepts we have defined. This is an account of the behavior of Tolstoi immediately after he has been admitted to the Academy.[7] He is now a young man, in a new situation which he has achieved partly by having met certain academic requirements and partly by having achieved the required chronological and physical symbols for admittance.

New adult situation of high positive valence defined.	When I returned on the 8th of May from my last examination, I found an apprentice at home from Rosanov's who had previously brought a basted uniform and a coat of smooth black cloth with a sheen, and had marked the lapels with chalk; he now brought the completed suit, with shining gold buttons, wrapped in papers. I put on the suit and found it beautiful, in spite of St. Jerome's assurance that the back of the coat wrinkled. I went down-stairs with a self-satisfied smile which involuntarily spread over my whole countenance.

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[7] Adapted from Tolstoi, *Childhood, Boyhood, and Youth* (pp. 196 ff.). The comments refer particularly to the italicized part in each paragraph (italics ours).

New situation; valence ±, leading to caution; social caution achieved by alertness to behavior of others.	I went to Volodya's room, *conscious of, though pretending not to notice,* the glances of the servants, which were eagerly directed toward me from the antechamber and the corridor.
Sudden increase in the positive valence and the extent of the new adult situation.	Gavrilo, the butler, caught up with me in the parlor, congratulated me on my entering the University, *presented to me, by papa's order, four twenty-five rouble bills, and said that, also by papa's order, from that day on the coachman, Kuzma, a vehicle, and the bay, Beauty, were at my entire disposal.*
New situation; valence ±, leading to conflict, emotionality, and behavior disruption.	I was so rejoiced at this almost unexpected happiness that I was unable to feign indifference before Gavrilo, and *after a moment of confusion and hesitation, I said the first thing that occurred to me—I think it was, "Beauty is an excellent trotter." I glanced at the heads that stuck through the doors of the antechamber and the corridor, and, not being able to hold myself in any longer, raced through the parlor in my new overcoat with the shining gold buttons.*
New adult situation of high positive valence.	As I entered Volodya's room, I heard behind me the voices of Dubkov, Nekhlyudov, and Dmitri who had come to congratulate me *and to propose that we drive out for dinner and drink champagne in honour of my entering the Academy.* Dmitri said to me that, though he did not like to drink champagne, he would drive out with us in order to drink "brotherhood" with me. *Dubkov said that I somehow resembled a colonel;* Volodya did not congratulate me, and very drily said that two days later we could go into the country. Although he was glad of my success, *it looked as if he were a little annoyed at my being now just such a grown person as he.* St. Jerome, who also came to see us, said in high-flown terms that his duty was now ended, but that he had done all he could, and the next day he should move to his next place. In answer to all they told me, *I felt that an involuntary, sweet, happy, stupidly, self-satisfied smile was blooming forth on my face,* and I

noticed that smile communicated itself to all who spoke to me.

And thus I had no longer a tutor, I possessed my own vehicle, my name was printed in the list of students, I wore a sword with a sword-knot,—sentinels might present arms to me—I was a young man, and, I am sure, I was happy.

New situation. Directions not known, leading to wandering, exploratory behavior.

We decided to dine at Yar's at five o'clock; but as Volodya had gone out I was able to pass two hours as I chose. *I walked about the rooms for some time, and looked in all the mirrors, now with my coat buttoned, now with it unbuttoned, now buttoned with the upper button only, and it always looked very beautiful to me.* Then, though I had scruples about evincing too much joy, I could not restrain myself, and *went to the stable and carriage shed to look at Beauty, Kuzma, and the carriage;* then I returned and *began to walk through the rooms, looking in the mirrors and counting the money in my pocket,* and all the time smiling blissfully. But not an hour had passed before *I felt lonely and sorry that nobody saw me in such a magnificent state.* So I ordered the carriage out, *and decided that I had better go to Blacksmith Bridge to make some purchases.*

New situation. Structure unstable leading to behavior easily influenced. Valence ±, leading to cautious behavior achieved by magnifying symbols of the preferred group.

I recalled that Volodya, upon entering the Academy, had bought lithographs of horses by Victor Adam, and tobacco and pipe, and it seemed to me necessary to do likewise.

New situation. Valence ±, leading to caution in revealing insecure situation.

While the eyes of all were turned on me from every side, and the sun shone brilliantly upon my buttons, upon the cockade of my hat, and upon my sword, I arrived at Blacksmith Bridge, and stopped at the picture shop of Dazziaro. I looked all around me, and walked in. *I did not want to buy Adam's horses, lest I should be accused of apeing Volodya.*

Overlapping interfering child and adult situations, leading to childish deference while engaging in adult activity.	*However being abashed, and wishing to choose as quickly as possible in order to save* the obliging clerk trouble, I took a water-colour painting of a female head which was standing in the window, and paid twenty roubles for it. Yet, though I paid twenty roubles, *I felt ashamed at having troubled two beautifully dressed clerks with such a trifle.*
New situation. Valence ±, leading to alertness for any evidence of danger; disrespect equals social danger.	At the same time, *I thought they did not pay me the proper respect.*
New situation. Valence ±, leading to cautious behavior via exaggeration of symbols of belonging to preferred group.	*As I was desirous of letting them know who I was, I turned my attention to a silver thing* that lay under the glass, and upon learning that it was a pencil-case costing eighteen roubles, I asked to have it wrapped up, and paid for it. Having found out that good pipes and tobacco could be purchased in the adjoining tobacco-shop, I politely bowed to the two clerks and walked out into the street, with the picture under my arm. In the neighboring shop, *I bought, also from a desire not to imitate anybody, not Zhukov's but Turkish tobacco and a Turkish pipe.*
Overlapping interfering child and adult situation, leading to behaving in childish and adult ways at the same time.	From Blacksmith Bridge I drove to a confectioner's on the Tver boulevard, and though *I tried to feign that it was the newspapers that interested me there, I could not keep myself from eating one pastry after another. Although I felt ashamed before the gentleman who kept looking at me from behind his paper, I devoured in rapid succession some eight cakes of every kind which was to be found in the shop.*
New situation. Structure unstable, leading to vacillating behavior. Valence ±, leading to caution in revealing insecure position.	When I arrived home I felt some heartburn but I paid no attention to it, and began to examine my purchases. *I was so disgusted with my picture that I not only did not put it in a frame, but concealed it behind the bureau, where Volodya could not see it.* Nor did I like the pencil-case at home; so I put it in the table, consoling

myself, however, with the thought that it was of silver, a fine piece of work, and very useful for a student.

But I decided at once to put to use the smoking paraphernalia, and to test them.

I opened the quarter-pound package, carefully filled the Turkish pipe with the brown, finely cut Turkish tobacco, placed upon it a burning piece of tinder, and, *taking the stem between the middle and ring fingers, —a position of the hand which I particularly admired—began to puff.*

Overlapping antagonistic adult and child situation. Adult situation of greater relative potency in beginning, changing to lesser potency at end of incident, leading to radical shift from adult to childish behavior.

The odour of the tobacco was very pleasant, but there was a bitter taste in my mouth, and the smoke choked me. I took courage and for quite a while puffed ahead. I tried to make smoke rings, and to breathe in the smoke. The room was soon filled with bluish clouds and *I felt a bitterness in my mouth and a slight whirling in my head.* I wanted to stop, and just to take a look at myself in the mirror, to which I had dragged myself with difficulty. I noticed that my face was as pale as a sheet. No sooner did I seat myself on the sofa than *I felt such nausea and weakness that I concluded the pipe was poisonous to me, and that I was sure to die.* I was frightened in earnest, and was about to call for help and send for the doctor.

This fear did not last. I soon saw what the matter was, and for a long time lay weak and with a terrible headache, upon the sofa, looking with dull attention at the trade-mark which was represented on the quarter-pound package, at the pipe which was laying on the floor, at the tobacco lumps, at what was left of the pastry, and *I thought with disappointment and sadness: "Evidently I am not yet a grown-up man, if I am not able to smoke like others, and puff, and pass the smoke through my blonde mustache."*

Discussion

In this section we have proposed the hypothesis that some of the somatopsychological significance of individual variations in physique in adolescence can be conceptualized in terms of *new* and *overlapping* psychological situations. It should be pointed out, however, that while these appear to be important ways in which physique affects behavior, the extent of their effectiveness on the total behavior of the individual will depend upon their relative importance in the total situation of the particular person. The situations deriving from physique are always some of a number of overlapping situations and may be of relatively high or relatively low potency. The importance of physique in determining behavior will vary accordingly. Nonetheless, some of the ways variations in physique operate, can be described, we believe, in terms of the concepts presented.

It should be emphasized that physique in adolescence has other significances than those considered here. While it is doubtless true that the overlapping child and adult subcultures are of great significance in adolescence, there also exists in every society an adolescent peer-culture more or less distinct from these. In this peer-culture, physique often has a meaning quite different from its significance for the childhood or adult status of the individual. Coming more closely to the individual case, each family has its own distinct variant of the prevailing culture, and within this family subculture, physique will have a special importance and significance. These more limited influences will operate within the more general situation that has been discussed in detail, and the resulting behavior will be modified accordingly. This fact, however, does not deny the basic importance of the more inclusive situation. In the particular case it is necessary to deal with the resultant of a number of independent determiners.

It is our suggestion that if in studying the somatopsychological significance of physique, physique is defined not in terms of physical measurement, but in terms of its psychological effects, its somatopsychological significance will turn out to be greater than it appears to be in the studies that have so far been made. We have proposed two such effects of physique which it eventually should be possible to measure. There are doubtless others. In carrying out such investigations of the truly psychological significance of physique, isolation of the somatopsychological variable is necessary.

Although this discussion has related to changes in the behavior of particular adolescents as they pass from one somatopsychological situation to another, it will be obvious that it applies also to differences in the behavior of individuals in different somatopsychological situations, and to adults as well as adolescents. Within the adult subculture, physique undoubtedly has social and psychological meanings too, and operates just as in adolescence to influence behavior. It seems probable that stereotypes respecting the behavior characteristics of large people and small people, for example, and the pressures and restrictions with respect to them within vocational and other social groups are not much weaker for adults than for adolescents. To the extent that this is true the correlations, reported in the first section of this chapter, between physical size and social activity, leadership and criminality are not unexpected on somatopsychological grounds. Exact descriptions of somatopsychological effects in adults as well as adolescents are greatly needed.

RESEARCH SUMMARY I

Social Behavior and Personality Correlates of Obesity

Author: *Bruch* (7, 8, 9, 10)

Problem and subjects: The etiology of obesity in children. Over 200 subjects entered into several different studies.

Method: The psychological aspects are based upon interviews with parents concerning their own and their children's behavior and attitudes.

Results: Behavior of obese children differs from that of normals as follows: greater food intake, greater avoidance of physical activity, greater timidity, greater unhappiness, greater emotional and social immaturity, higher intelligence, greater studiousness, more limited range of interests, fewer friends, more frequent expression of sensitivity to heckling. The source of this behavior is said to lie in psychogenic factors within the family. The mother tends to be highly ambivalent toward the child. Food becomes a symbol of the love, security, and satisfaction the child requires, and a way for the mother to deny the rejection she cannot acknowledge. The child tests his mother's love by demanding excessive food, and the mother demonstrates her 'love' by providing it. However, Bruch does not completely deny the possibility that obesity when it becomes established may reinforce via its somatopsychological significance the pattern of inactivity, timidity, etc., that has been established.

Comments: Objective data upon social behavior and personality are not given. Conclusions are based largely on parents' reports which may be unreliable. There is no control group, and standards of what is normal timidity, happiness, etc., are not established. There is no evidence that these children are representative of obese children in general.

Author: *Levy* (31)

Problem and subjects: The intelligence and personality of 33 pre-adolescent boys, exhibiting mons-mammary girdle type of fat distribution, referred to guidance clinic because of behavior difficulties. Froelich's syndrome cases.

Method: Stanford-Binet tests; rating for submissiveness-aggressiveness on basis of case record with 96% agreement by two raters.

Results:

I. Q.	*No. of cases*
Below 100	11
100 or above	20
No data	2
Submission-aggression	
Submissive	26
Aggressive	5
Mixed	2

"This is an unusual finding, since the majority of children who come to the Institute presented problems of aggressive behavior." Of 22 children 20% or more overweight, but not displaying Froelich's syndrome distribution, 59% exhibited aggressive behavior and 36% submissive behavior. Submissive behavior is said to be due to a constitutional factor: no clear evidence is found for psychogenic or somatopsychological etiology.

Comments: The fact that the Froelich's syndrome cases were distinguishable from the other obese cases on the basis of behavior is impressive. Presumably any selective factors or methodological biases would operate equally in both groups.

Author: *Bronstein et al.* (6)

Problem and subjects: The intelligence and personality of 35 obese children under 14 years of age; 24 boys, 11 girls.

Method: Stanford-Binet, Stanford Achievement, Pintner Aspects of Personality, Terman-Miles Masculinity-Femininity Test.

Results:

I. Q.	*No. of cases*
Above 110	17
90–109	9
Below 90	9
Median 109	

Achievement in accordance with M. A. No significant deviations from normal on personality tests. Sensitivity to weight reported by parents of 15 of the 23 children for whom data were available. Interest in sedentary activities pronounced. Excessive food intake.

Comments: The appropriateness of personality tests for children of this age is questionable. Selective factors which may have operated are not clear.

Author: *McHale* (35)

Problem and subjects: The intelligence, school achievement, behavior, and social status of overweight children 11 years of age compared with underweight children; 52 boys and 52 girls in each group.

Method: Data consist of questionnaire material from children and parents, and school records. Cases were seriatim from school population until correct numbers in each group were obtained.

Results:

Socio-economic status	*Overweight*	*Underweight*
Father professional or business man	62.0%	36.9%
Father in skilled or unskilled trades	37.0%	59.0%
Stanford-Binet I.Q.	107	102
School grade	6.9	6.3
Woodworth-Mathews Personal Data Sheet	no differences	

Frequency of response to two long questionnaires are given item by item; no systematic differences appear.

Comments: This study is unusual in its careful avoidance of selective factors. Many data that are not analyzed are given.

Author: *Stolz and Stolz* (52)

Problem and subjects: The reactions of adolescent boys and girls to their own obesity. N = 93 boys, 83 girls.

Method: Free observations made during medical examinations over 8-year period.

Results: 7 boys and 13 girls gave definite evidence to the medical examiner that they were disturbed by fatness at some time during adolescence.

Author: *Sanford et al.* (45)

Problem and subjects: The relation of obesity to behavior in early adolescents and pre-adolescents in private school. N = 48.

Method: Correlation of teachers' ratings of behavior with measures of physique.

Results: Of 13 subjects with tendency to obesity, 7 were high and none were low on a behavior syndrome called Placid Immobility (high ratings for passivity, placidity, apathy). Which comes first, the obesity with apathy as a reaction, or apathy with obesity as a resultant is an unsolved problem.

Author: *Mittelmann* (38)

Problem and subjects: Behavior of 16 obese boys aged 4–14 all of whom had small or undescended testicles.

Method: Interviews and observations of the boys.

Results: 7 subjects rated as being overly dependent; 10 subjects rated as being overly aggressive (1 subject exhibited both). Behavior disturbances are not always present in obese boys. When they are these are determined: 1) by direct physiological influences or 2) by somatopsychological factors (injured self-esteem, inability to compete, loss of parental love, sibling rivalry). The chief manifestations are depression, submissiveness, dependence, aggression, hostility.

Author: *Strong* (56)

Problem and subjects: Attitudes of 2,340 adult men toward fat and thin men.

Method: Direct, written question and response.

Results: Subjects indicated which of paired characteristics they liked best:

Fat men	10%
Thin men	20%
Indifferent toward this aspect of physique	70%

RESEARCH SUMMARY II

Social Behavior and Personality Correlates of Normal Variations in Physical Size

Author: *Gates* (16)

Problem and subjects: Correlation of physical and behavioral maturity at kindergarten and 4th grade levels. N = 115.

Method: Physical measures correlated with teachers' ratings of behavior.

Results:

	Average correlation coefficients	
	Social maturity	*Emotional maturity*
Height	.11	.15
Weight	.09	.17

Comments: Ratings are averages for 5 teachers. Correlations are the average of age and class groups computed separately.

Author: *Hardy* (19)

Problem and subjects: Popularity of 3rd to 7th grade children in relation to physical characteristics. N = 215 boys, 194 girls.

Method: Comparisons between the 10% best and least liked children of the same socio-economic status.

Results: "According to Baldwin-Wood norms, no pupil among the socially successful was classed as underweight . . . size did not appear to be a factor. . . . The most popular cases tended to deviate in both directions from the average. . . . Short boys and tall girls were noted among the best liked, as well as tall boys and short girls."

Author: *Terman* (57)

Problem and subjects: Characteristics of leaders in elementary grades. N = 100.

Method: Teachers' reports of characteristics of children who exhibit leadership.

Results: Leaders characterized by teachers as being taller than nonleaders.

Comment: An important pioneer study.

Author: *Hollingworth and Gray* (23)

Problem and subjects: Relation between size and scholastic attainment in a grade school group of intellectually gifted children. N = 50.

Method: Smaller children's achievements compared with those of larger children when age and brightness were constant.

Results: No significant differences between small and large children within age and brightness groups. The authors conclude that intellectual achievement is unaffected by motivation deriving from smallness of stature.

Comment: This highly selected, segregated group was probably atypical in a number of respects.

Author: *Sanford et al.* (45)

Problem and subjects: Relation between size and behavior in a private grade school group. N = 21 boys, 27 girls.

Method: Correlations between measures of physique and teachers' ratings of behavior; age constant.

Results: Correlation coefficient of large physique and passive timidity: —.33. The passive, timid subjects tended to be small in stature, poorly nourished.

Author: *Bower* (5)

Problem and subjects: Characteristics of popular boys, age 12–16. N = 90.

Method: Physical measures correlated with popularity score based on free choice of peers.

Results: Correlation between height and popularity: —.17 ± .07 at 12 years of age. Repeat correlations at each of the following four years confirmed low negative correlation.

Author: *Partridge* (39)

Problem and subjects: Characteristics of leaders in Boy Scout troops. N = 273.

Method: Correlation between leadership rating and physical measures.

Results: Correlation (with age constant) between leadership rating and height, .07 ± .04; weight, .13 ± .04.

Author: *Stone and Barker* (54, 55)

Problem and subjects: Relationship between physical and behavioral maturity in girls. Exp. # 1, N = 350; exp. # 2, N = 1,000.

Method: Differences in verbally expressed interests and attitudes of premenarcheal and post-menarcheal girls of the same C.A., race and socioeconomic background.

Results: Experiment #1: With all groups and tests the post-menarcheal girls answer the questions in a more mature way than the pre-menarcheal girls. On the Pressey test the difference in mean scores was equivalent to the difference in scores of girls differing in C.A. by 15 months; with the Sullivan test the difference was equivalent to 11 months in C.A. These differences are statistically reliable. A study of differentiating items indicated that post-menarcheal girls differ from pre-menarcheal girls by more frequently expressing heterosexual interests, interest in adornment, interest in day dreaming, less frequently showing interest in activities requiring strenuous physical activity.

Experiment #2 verified experiment #1. The post-menarcheal girls averaged 17 lbs. heavier and 2″ taller than the pre-menarcheal girls. Two possible sources of the behavioral difference exist: direct endocrine effects or indirect somatopsychological differences.

Author: *Sollenberger* (50)

Problem and subjects: Relationship between physical and behavioral maturity in boys. Exp. #1, N = 10; exp. #2, N = 23.

Method: Correlation between assays of androgenic hormone activity and ratings and tests of behavioral maturity.

Results: Rank order correlation coefficients between androgenic hormone level and:

House parents' judgment of behavioral maturity (Exp. #1)	.90
Furfey test of interest maturity (Exp. #1)	.65
Furfey test of interest maturity (Exp. #2)	.51

An inspection of the test items revealed that the physiologically more mature boys more frequently showed heterosexual interests, interest in adornment, and liking for strenuous activities. The author interprets these results in terms of direct hormone influence on the central nervous mechanisms, but points out the possibility that because the boys with the high hormone level are larger and more adult appearing, somatopsychological factors may be a source of some of the behavioral differences found.

Author: *Healy and Bronner* (22)

Problem and subjects: Characteristics of delinquent and nondelinquent children. N = 105 in each group.

Method: Comparisons of delinquents with nondelinquent siblings.

Results:

	Number of cases	
	Delinquent	*Nondelinquent*
Very tall (5″ over norm)	4	0
Very short (5″ under norm)	10	7
Overweight (20% or more)	3	1
Underweight (10% or more)	8	9

Comment: A number of other studies report the physical characteristics of delinquent children, but without standards or control groups to make adequate comparisons possible.

Author: *Burt* (12)

Problem and subjects: Characteristics of delinquent and nondelinquent children. N = 197 in each group.

Method: Delinquent children compared with nondelinquent controls of same sex, age, school, and neighborhood.

Results: Percentage of children two years or more overdeveloped and underdeveloped in size:

	Delinquent	*Nondelinquent*
Boys under	8.1	1.5
Boys over	4.1	0.5
Girls under	2.7	2.0
Girls over	2.7	1.0

Author: *Bellingrath* (2)

Problem and subjects: Characteristics of high school leaders. N = 74.

Method: Physical size of high school seniors elected to leadership of clubs, classes, etc., compared with size of nonleaders.

Results:

	Leaders	*Nonleaders*	*Difference*
Boys			
Mean height in inches	69.15	68.34	.81 ± .43
Mean weight in pounds	148.15	142.55	5.6 ± 2.7
Girls			
Mean height in inches	65.15	63.67	1.48 ± .31
Mean weight in pounds	127.30	117.05	10.25 ± 2.2

Author: *Fleming* (15)

Problem and subjects: Characteristics of girls rated by their fellows as having a "pleasing personality." N = 62.

Method: Correlations of measures of physique with personality ratings.

Results: Correlation between "pleasing personality" and height, —.19; weight, .03.

Author: *Eisenberg* (14)

Problem and subjects: Characteristics of dominant and submissive college students. N = 216 men, 238 women.

Method: Correlation of measures of physique with dominance score on the Maslow Social Personality Inventory.

Results:

Correlation of dominance score with:

	Men	*Women*
Height	.20 ± .045	—.003 ± .044
Weight	.17 ± .045	—.08 ± .044

Author: *Bender* (3)

Problem and subjects: Characteristics of ascendant and submissive college men. N = 400.

Method: Correlation of measures of physique with Allport test for ascendance-submission.

Results: Correlation of ascendance score with height, —.03 ± .034; weight, .09 ± .034.

Author: *Middleton* (37)

Problem and subjects: Personality characteristics of college freshmen in relation to physique. N = 235 men, 255 women.

Method: Correlations between measures of physique and Bernreuter scores.

Results: Correlation coefficients range from —.03 to +.08, with standard errors of .03 to .07.

Author: *Sommerville* (51)

Problem and subjects: Characteristics of college students successful in extracurricular affairs. N = 117.

Method: Correlations between ratings for success in extracurricular activities and measures of physique.

Results: Correlation coefficient (with age constant) between rating for extracurricular success and height, .004; weight, —.015.

Author: *Hunter and Jordan* (26)

Problem and subjects: Characteristics of male college leaders. N = 82 leaders, 103 "average" students.

Method: Comparisons between averages.

Results: Leaders are 6 months younger than nonleaders. Despite this "a slight tendency for leaders to be taller and possess fewer physical defects was noted." Leaders are 7 pounds lighter than nonleaders.

Author: *Sheldon* (48)

Problem and subjects: Physical size of men rated as sociable, persevering, leaders, aggressive, excitable. N = 155.

Method: Correlation of measures of physique with behavior ratings by fraternity brothers.

Results:

	Coefficients				
	Aggressiveness	*Sociability*	*Perseverance*	*Leadership*	*Emotional excitability*
Height	.133	.002	—.065	.049	.093
Weight	.073	.131	.028	.024	.079

Author: *McKinney* (36)

Problem and subjects: Characteristics of well adjusted and poorly adjusted college men. N = 72.

Method: Adjustment determined by ratings of fraternity brothers.

Results:

Average	*Well adjusted*	*Poorly adjusted*
Height in inches	69.63 ± .48	70.32 ± .50
Weight in pounds	159.20 ± 2.67	156.21 ± 3.68

Author: *Faterson* (as reported by Paterson) (40)

Problem and subjects: Characteristics of persons with inferiority attitudes. N = 673 men, 531 women.

Method: Measures of physique correlated with score on self-rating test comprised of items presumed indicative of inferiority attitudes.

Results: Correlation of inferiority attitude with:

	Men	*Women*
Height	negligible	.10 ± .03
Weight	negligible	—.10 ± .03

Author: *Gowin* (18)

Problem and subjects: Physical characteristics of high executives and minor officials.

Method: Comparison of mean heights.

Results:

Group	*No. and % returning questionnaire*		*Mean height in inches*	*Difference*	*S. D. diff.*
	No.	*%*			
Bishops	81	72	70.8		
Small-town preachers . .	30	64	69.2	1.6	0.56
University presidents. . .	58	80	71.2		
Small-college presidents	26	74	69.7	1.5	0.46
City school directors. . .	25	72	70.3		
Small-town principals. .	28	40	69.3	0.8	0.67
State Bar presidents. . . .	38	79	69.5		
County attorneys	31	64	69.1	0.4	0.53
Sales managers	23	38	69.5		
Salesmen	50	55	68.5	1.0	0.52
Railroad presidents. . . .	63	53	71.3		
Station agents	30	58	68.8	2.5	0.51
Intellectuals	197	68	70.7		

Comment: Data collected by questionnaire less reliable than direct measurements.

Author: *Kitson* (28)

Problem and subjects: Characteristics of office, specialty, and foot-wear salesmen. N = 185.

Method: Mean height and weight of salesmen in relation to sales record.

Results:

	% having sales record as specified		
Height	*Best*	*Median*	*Poorest*
Tallest	37	21	42
Median	32	36	32
Shortest	31	43	26

Author: *Hooton* (24, 25)

Problem and subjects: Characteristics of American criminals.

Method: Physical characteristics of Old American criminals and noncriminals.

Results: "A comparison of the total criminals with total civilians shows the criminals are inferior in stature to the extent of 1.02 centimeters (4.2 times P. E.)."

Author: *Goring* (17)

Problem and subjects: Characteristics of English criminals. N = 3,000.

Method: Physical characteristics of criminals and noncriminals of the same social classes and the same ages; relative frequency of marriage of criminals of different heights.

Results:

	Average height in inches		
Social class	*Noncriminals*	*Criminals convicted of stealing and burglary*	*Diff. and P.E.*
Professional	67.93	65.89	2.04 ± .38
Commercial	67.28	65.64	1.64 ± .15
Soldiers, police, servants messengers	67.22	65.42	1.80 ± .19
Laborers	67.10	65.21	1.89 ± .08
Sailors, fishermen	66.37	64.78	1.59 ± .25
Miners	66.91	64.70	2.21 ± .31
Artisans, factory operatives	66.80	64.97	1.83 ± .10

The data for weight reveal differences of about the same degree of significance.

Frequency of marriage in relation to height		
Height in inches	*No. of cases*	*% married*
Less than 64	484	40.0
64–66	125	43.8
67–69	753	45.0
Over 70	127	56.7

Similar trends occurred within particular vocational groups.

RESEARCH SUMMARY III

SOCIAL BEHAVIOR AND PERSONALITY CORRELATES OF NORMAL VARIATIONS IN MOTOR ABILITY

Author: *Bower* (5)

Problem and subjects: Relation of strength and physical prowess to popularity of adolescent boys. N = 90.

Method: Correlation of dynamometer scores and average score for 5 athletic events with popularity rating by peers.

Results: Correlation of popularity rating with strength, .30 ± .07; athletic ability, .39 ± .06. There were a number of boys who were highly popular who possessed neither of these characteristics. These boys tended to excel in one or more of the following: intelligence, reputation for friendliness, for enthusiasm, for humor, for self-assurance, for daring, or fighting. The converse of this, strong, physically able boys who were unpopular was noted in boys who did not exhibit active, expressive, or self-assured behavior.

Author: *Tryon* (60)

Problem and subjects: Relation of reputation trait "good at active games" with other reputation traits in adolescent boys and girls. N = 100 boys, 100 girls.

Method: Intercorrelation of ratings by peers.

Results: *Boys:* 12-year-olds: reputation for being "good at active games" associated with reputation for "daring," "leader," "friendly." This cluster of traits had highest prestige for these boys.

15-year-olds: "good at active games" associated with "daring," "leader," "fighter." This behavior syndrome was lower in prestige but still high.

Girls: 12-year-olds: "good at active games" not closely correlated with other traits, and of little prestige value, if not actually looked on with disfavor.

15-year-olds: "good at active games" correlated with "humor" and "good sportsmanship." It had prestige value for girls who were not successful in heterosexual relations.

Author: *Hardy* (19)

Problem and subjects: Relation of popularity to strength and physical ability in grade school pupils. N = 215 boys, 194 girls.

Method: Comparison of the least popular, average, and most popular children of the same age, sex, and social level.

Results: "The best liked pupils were markedly superior to the other pupils in tests of physical achievement, 70% of them scoring above the mean of the total group."

Author: *Thrasher* (59)

Problem and subjects: Studies of children's gangs.

Method: Sociological description.

Results: Physical prowess reported to be an important factor in the leadership of gangs, though by no means essential. Daring, decisiveness, and "brains" were often found to confer leadership on boys physically deficient.

Author: *Sanford et al.* (45)

Problem and subjects: Interrelation of behavior characteristics in grade school children. N = 21 boys, 27 girls.

Method: Intercorrelation of ratings by teachers and investigators.

Results: Correlation of ratings for good motor coordination with ratings for social participation, .24 to .45; with ratings for conscientiousness, .40; with ratings for orderly productivity, .40.

CHAPTER III

SOMATOPSYCHOLOGICAL SIGNIFICANCE OF CRIPPLING

In this chapter we shall deal primarily with permanent orthopedic impairments, although some of the studies and theoretical discussions which are reviewed include other physical disabilities as well. Detailed discussion of problems of employment and vocational rehabilitation will be reserved for a separate chapter. Three types of reports are covered: 1) reports of investigations giving sufficient data to permit evaluation of the conclusions, 2) reports giving only partial data and conclusions, 3) reports of the general impressions of experienced workers with the handicapped. The studies are discussed in order of increasing chronological age of the subjects within each of these categories.

THE BEHAVIOR AND PERSONALITY OF THE CRIPPLED PERSON

Studies Reporting Complete Data

Kammerer (46)[8] studied the general adjustment of 50 hospitalized children with scoliosis and 30 hospitalized children with osteomyelitis. The mean age of the children was 13.3 years. Data were collected by means of the following tests and procedures: Stanford-Binet Intelligence Test, Porteus Maze Test, Kent Oral Emergency Test, Vineland Social Maturity Scale, Rogers' Test of Personality Adjustment, interview with child, interview with parents, and observation of the child in the hospital.

General adjustment: On none of the standardized tests did the mean score of the crippled children differ significantly from that of the physically normal groups on which the tests were standardized. Two judges independently rated the general adjustment of each child on the basis of his test results, observations of his behavior, and his case history record. A five point scale was used with descriptions and weights as follows: 1) very good adjustment, 2) fair adjustment, 3) average adjustment, 4) poor adjustment, 5) very poor adjustment. On the basis of this procedure the children with scoliosis were rated 3.28, and the children with osteomyelitis 3.29, i.e., "average with a slight trend toward the poor end of the scale."

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[8] References for Chapter III will be found on pp. 306–311

Duration of disability: The average adjustment rating of the 10 children with longest duration of handicap, 11 years or more, was 3.7, "poor adjustment"; and for the 10 children with shortest duration of handicap, 9 months or less, 3.0, "average adjustment." The rank order coefficient of correlation between duration of handicap and poor adjustment rating was .29 ± .08. A study of individual cases supported the statistical finding of a slightly poorer adjustment for children with a long history of physical handicap. The author concludes that duration of handicap is of some, but not great, importance as a factor in adjustment.

Severity of disability: Children whose disability was very severe received an average adjustment rating of 4.0, "poor adjustment"; while those with disabilities of mild severity received a mean adjustment rating of 3.0, "average adjustment." The rank order correlation between severity-of-handicap rating and poor adjustment rating was .51 ± .08. Individual case histories supported statistical findings and the author concludes that there is an appreciable relation between severity of handicap and poor adjustment.

Age, intelligence, and type of disability: No evidence of intellectual retardation was found. Good adjustment was not found to be related to either chronological age or kind of disability.

Family overprotection and indulgence: Children in families judged to indulge the disabled child (64% of the cases) received mean adjustment ratings of 3.45, while children in families where there was no evidence of overprotection received a mean rating of 2.97. From this and a study of the case histories, the author concludes that overprotection has considerable effect upon the child's behavior.

Children's interests: Questions on vocational and play interests, friendships, and desire to grow up showed no clear deviation from the normal.

Occurrence of compensatory behavior: Behavior which the author calls compensatory was found in only 32% of the cases. Included in this category were unusually strong interest in clothes, reading, study, music, writing, drawing, watching sports, religion, and making a scrapbook of medical cases. The adjustment rating of these children was slightly worse than average. This compensatory behavior occurred less frequently than timidity or evidences of inferiority feeling. From this the author concludes that "there seems to be little support of the Adlerian conceptions."

General conclusions: 1) "Almost every source . . . seems to give evidence that the crippling has no unique influence on the child's behavior. . . . Whether maladjustment occurs seems to be dependent upon the number and severity of the problems with which the child is confronted and not alone the presence of crippling."

2) "No significant psychological difference seems to exist between disease classifications, [and there is] . . . no reason why the groups should be kept separate for study."

3) "Degree of impairment and cosmetic appearance are of more significance than the etiology of the disorder."

This is one of the most adequate studies of crippled children available. The combination of statistical and clinical approaches leads us to place considerable confidence in the findings. Of especial importance is the size and selection of the sample. These children were cared for in a public hospital at public expense. However, because of the great cost of treating their disease conditions, children from families in the middle economic levels were also included. We find no reason to suspect that these children may be unrepresentative of crippled children in the middle and lower socio-economic levels. Perhaps the chief shortcoming of the study lies in the failure of the tests or interviews to get below the superficial levels of the personality. However, this was not part of the author's intention, and a study of the manifest behavior of crippled children is entirely justified.

Newell (76) presents some data upon a set of identical female twins 14 years old, one of whom was partially paralyzed at two years of age by a disease that was diagnosed at the time as poliomyelitis. At 14 years of age the disabled twin's right arm and leg were atrophied, weak, and moderately rigid. Data on behavior are given as follows:

	Disabled twin	*Nondisabled twin*
Intelligence quotient (Stanford-Binet)	71	100
School grade	8A	9B
Reading	Especially deficient	
Handedness	Left; changed from right because of paralysis	

Personality: The disabled twin is described as "a girl who has retained many of her childish ways, who seems to crave affection and who shows a drive to gain attention, this last being especially noticeable in school; she is a poor worker in the store [of her father] and feels inferior to her twin physically, intellectually, and socially. She is nervous, high-strung, unpopular, and shows almost no ability to make friends. She is suspicious of people, thinking that they are talking about her, and altogether she seems to be a very unhappy girl." During the psychiatric examination she was "at first shy, tense and seemed afraid. She sat on the edge of chair holding her right hand behind her. Later when she was more at ease she placed her right hand in her lap and massaged it with the left hand. She showed that she felt definitely inferior to her twin and said she could not think of any way in which she excelled her. . . . Her earliest memory was when she was re-learning to walk after her paralysis, and how anxious she was to catch up with her twin who walked well. Her second wish was to have lots of friends, adding that she has only two friends she can trust. Even her best friend goes back on her at times. She has a hard time making friends, saying 'I'm too crabby. I get mad too easily'." The disabled twin rated herself and her sister as follows:

	Self	*Twin*
Intelligence	dull	average
Top school ability	8th grade	college
Alertness	abstracted	awake
Attention	attends fairly well	can be absorbed
Talkativeness	mostly quiet	talks more than some
Negativism	complies slowly	rather easily persuaded

The nondisabled twin is described as "being more mature and showing less drive for attention and affection. She is a capable worker and feels superior to her sister in every sphere. She is more stable and is popular, being able to make friends easily. She is trustful and cheerful and seems on the whole to be a rather happy girl." The psychiatric examination "showed her to be more cheerful and self-confident. She seemed much happier and more aggressive. . . . She feels superior to her twin and describes her interest in elocution in contrast to [her twin's] shyness. . . . She describes herself as being more sociable, and she has a desire to emulate her older sister who is bright and popular." The nondisabled twin rated herself and her twin as follows:

	Self	*Twin*
Intelligence	bright	average
Top school ability	college	high school
Alertness	fairly awake	alert to the present
Attention	attends very long periods	can be absorbed
Talkativeness	talks her share	talks more than her share
Negativism	very easily persuaded	open minded

Social-psychological situation: The disabled twin, following her illness, was seriously rejected by both parents. During her two months' hospitalization at two years of age, she was not visited once by her mother. Her father believed that his favorite son caught his fatal illness from this twin and he completely ignored her thereafter. She was not allowed to do interesting things around the store and was constantly compared unfavorably with her twin by her parents and sisters. Not only was she inferior physically but also in reading ability, a defect that may have arisen partly from the necessity of changing from right handedness to left handedness. The nondisabled twin was generally approved of; she was allowed to do interesting and important things at the store. Her obvious superiorities to her twin sister physically, socially, and scholastically were publicly pointed out by members of her family.

While there is some possibility that the disabling disease was some sort of encephalitis, and that the personality sequelae were partly due to central neural organic lesions, the author is of the opinion that the marked differences in the personalities of these girls lie largely in the social-psychological environment. "The effects of [the] disease may be stated somewhat as follows: Her development was retarded by her paralysis; she was handicapped psychologically by her mental retardation and reading disability. When these effects were kept in constant contrast with her twin . . . one would expect to find marked feelings of inferiority and jealousy."

Gates (36) studied 18 crippled boys and girls 14 to 23 years old and a group of normal controls equivalent in age, sex, intelligence, and socio-economic background. In seven cases the control subject was a sibling of the crippled child. The subjects were secured from a medical clinic and were mostly charity patients. The following disabilities were included: after effects of poliomyelitis, osteomyelitis, scoliosis, arrested bone tuberculosis, congenital orthopedic defects, cardiac impairment, and orthopedic injury. The following tests and procedures were administered to both crippled subjects and controls: Stanford-Binet Intelligence Test, The Kent-Shakow Form Board, Minnesota Manual Abilities Test, O'Connor Tweezer Test, Washburn Social Adjustment Inventory, Maller Case Inventory, Test of Knowledge of Social Usage, Iowa Silent Reading Test, Stanford Achievement Test, Myer-Ruch High School Progress Test, Brainard Specific Interest Inventory, Hildreth Personality and Interest Inventory, Waller-Pressey Occupational Orientation Test, and an autobiography. No significant difference between the crippled and noncrippled subjects was found on any of the tests. A study of the autobiographies suggested that cultural background and personal-social relations in the home may effect adjustment more than crippling.

Nagge and Sayler (75) administered the Neymann-Kohlstedt test for introversion-extroversion to 144 physically disabled high school students attending a school for crippled children. Scores were compared with those of a group of physically normal children of equivalent sex, age, and race. No significant differences were found between the groups, and there was no correlation between introversion score and length of time crippled.

Miller (70) made a survey of the educational needs of all the crippled children in the area served by the Benjamin Franklin High School in

New York City. Of 320 serious orthopedic cases, 150 were interviewed. Ages ranged from 14 to 21 years. Family incomes were generally very low and foreign cultural influences strong. On the basis of each interview, the child was judged by the interviewer to be relatively well adjusted or unadjusted. No very definite criteria of adjustment or unadjustment were established; the subjective impression of the interviewer was the main reliance. Of the 150 children interviewed, 73 were diagnosed as "adjusted" and 77 as "unadjusted." With respect to age at which crippling occurred, the two groups were distributed as follows:

Age in years at crippling	*Adjusted*	*Unadjusted*
9 or earlier	34	56
After 9	21	14
Unknown	18	7

With respect to seriousness of disability, two sources of data were available: location of impairment and limitation of movement. If subjects with one foot, leg, hand, or arm impaired are placed in the "less serious" category, and those with both feet, legs, hands, or arms, spine or back, one arm and one leg, or entire body impaired are placed in the "more serious" category, the following distribution occurs:

	Adjusted	*Unadjusted*
Less serious	42	31
More serious	31	46

If subjects described as "walks with ease, uses hands" are placed in the "less serious" category, and the remainder in the "more serious" category, the following distribution occurs:

	Adjusted	*Unadjusted*
Less serious	49	30
More serious	24	47

The lack of objective criteria of adjustment is a serious shortcoming of this investigation; the influence of suggestion upon subjective ratings of this sort is well known.

Rosenbaum (85) administered the Thurstone Personality Schedule to 43 crippled girls in a charity summer camp. The girls ranged in age from 16 to 25 years. In comparison with the college freshmen women upon whom the schedule was standardized, these crippled girls secured a mean rating indicative of "emotional maladjustment." It is doubtful if this result can be taken at its face value, however. In the first place, girls of this age attending a charity summer camp are quite differently selected, aside from their crippledness, from college freshmen. In the second place, 75% of the group were Jewish, a much greater proportion than in the standardization group, and other studies have reported Jewish students to score more "neurotically" than gentile students on this test. In the third place, the diagnostic significance of the items is doubtless different for crippled and for normal girls.

McKinney (65) reports some characteristics of college men who were judged by their fraternity and house mates to be relatively well adjusted and relatively maladjusted. Of 462 men, the 36 most frequently mentioned as well adjusted were compared with the 36 most often mentioned as poorly adjusted. Data relevant to the present discussion are as follows:

	Well adjusted	*Poorly adjusted*
History of serious illness	17%	30.5%
Wears glasses all the time	3%	22%
Has facial scars	5.5%	11%
Has bodily defects	0	14%

The author concludes that these data lend support to Adler's contention of the importance of organic inferiority, though they do not show such organic factors to be a universal concomitant of maladjustment. One limitation of this study is the halo effect undoubtedly present when the judgments were made. Although the instructions carefully stressed the fact that only behavior was to be considered in nominating well and poorly adjusted men, it is well known that other factors enter into such judgments. Furthermore, the common belief that physical defects are conducive to behavior peculiarities would tend to lead judges to search for and find behavior peculiarities in such persons. Finally, college fraternity men are highly selected for both physical and behavioral normality, so the range of variability in the group was undoubtedly very much restricted. The last factor would operate to reduce existing relations.

The study of handicapped women made by Landis and Bolles (50) is by far the most complete of any available to date. The major problems of this investigation were: 1) What are the characteristics of the psychosexual development of physically handicapped women? 2) How do these characteristics compare with those of physically normal women? 3) How does the physically handicapped woman adjust to actual problems of everyday life? 4) Is there a characteristic sick child psychology that continues? 5) Is emotional development affected by the presence of physical handicap?

The subjects were 100 women, 25 in each of the following disability categories: general orthopedic impairments, spastic paralysis, cardiac impairments, epilepsy. Comparisons were made between the separate disability categories, and between the whole group and 153 physically normal and 142 psychotic subjects (51). The age of the disabled subjects ranged from 17 to 30 years; 49 subjects were disabled before the age of 4, and 51 between 4 and 13. The data upon which the present report was based consisted of 1) subjects' responses to a strictly controlled interview, 2) ratings made on the basis of the interview responses, and 3) a medical history.

The results show a remarkable similarity between the responses of the widely different disability groups involved. Upon the characteristics listed below there was intergroup agreement, but deviation from the normal group. The comparable percentages exhibiting these characteristics were as follows:

	Handicapped	*Normal*
1. First knowledge of sex differences before age 6..	11	33
2. Complete sex information before age 15.......	11	26
3. Little or no preparation for menstruation......	78	55
4. No history of masturbation..................	74	50
5. Extremely close to family....................	23	3
6. No evidence of homo-erotic behavior..........	23	8
7. Never been in love..........................	30	3
8. Never had dates with boys...................	28	1
9. First date before age 16.....................	18	52
10. No evidence of masculine protest.............	43	26
11. Recalled desire to be a boy in childhood.......	43	69
12. Attitude of disgust toward sex................	7	21

From these and related data the authors conclude that in comparison with normal women, physically handicapped: 1) are less auto-erotic, 2) are more emotionally dependent on their families, 3) are less homo-erotic, 4) have fewer heterosexual contacts, 5) give less evidence of masculine protest, 6) have equal narcissism, 7) are less emotional about sex in general.

Significant relationships between the characteristics studied for the total group were found, as shown by the following percentages:

	Age at onset of disability	
Personality characteristics	*Less than 4 yrs.*	*4 or more*
Emotionally tied to parents................	34	12
Psychosexually immature	60	40
Desire for self-improvement	10	28
Number of cases	49	51

	Degree of handicap	
	Moderate	*Extreme*
Poor adjustment to handicap	18	43
Poor general adjustment	25	50
Blue or depressed	14	37
Alternate between wanting to be alone and in company	4	25
Number of cases	28	72

No relation was found between degree of handicap and emotional dependence on family, psychosexual maturity, masculine protest, fears, or worries.

	Changing disability	
	Worse	*Same or improving*
Poor general adjustment	65	37
Social contacts unsatisfying	35	8
Number of cases	20	80

	Degree of intelligence	
	Low	*High*
Poor adjustment to handicap	50	18
Poor general adjustment	55	27
Masculine protest	13	34
Withdrawal adjustment	25	7
Substitution adjustment	11	30
Number of cases	56	44

Degree of adjustment was also found to be related to religion: Catholics were best adjusted, Jews worst adjusted. Many of the subjects were very religious; 62 of them believed it possible to be cured by faith.

There was little evidence that degree of cosmetic handicap had any influence on personality. Also ratings on fears gave no indication that these women had more fears than physically normal women. The total group was distributed as follows according to a rating of general adjustment:

	Number of cases
Happy and satisfied with life	3
Fairly good adjustment	23
Fair adjustment	31
Doubtful adjustment	31
Really inadequate adjustment	12

With respect to type of adjustment to handicap, the authors consider the main problem facing every handicapped person to lie in the fact that certain kinds of activity and social behavior are impossible. The handicap serves as a never ending source of limitation and frustration. The following kinds of adjustment to this situation are identified:

1. *Withdrawal* (17 subjects). This is characterized by withdrawal into self and avoidance of situations that might cause embarrassment or discomfort. It is associated with narrow interests, older age, handicap of long standing, insecure homes, below average intelligence, and unconcern about sex. This adjustment was most frequently associated with unhappiness.

2. *Substitutive* (19 subjects). In this adjustment, unattainable modes of self-expression are replaced by modes of response which are different in kind but accomplish a similar purpose. This adjustment is associated with higher intelligence, younger age, average sex affectivity, extreme handicap. Subjects with this mode of adjustment were rated well adjusted.

3. *Obliterative* (16 subjects). These subjects showed a tendency to repress any conscious recognition of their disability. Even in cases of very extreme handicap, these individuals refused to admit that they were incapacitated in any way. This adjustment is associated with rather high educational level, but only average intelligence, secure home background, and mild cosmetic defect. General adjustment is judged by the authors to be best of all categories of adjustment.

4. *Compensatory* (48 subjects). This is a heterogeneous grouping made up of the following subtypes: a) cyclic adjustment, with periods of emotional upset and depression when the life situation becomes difficult, b) fatalistic attitudes toward physical condition and the future, c) paranoid reactions with projection of feelings of inadequacy upon other persons or conditions, d) extremely aggressive and competitive reaction, often approaching fanaticism.

With respect to frequency of neurotic reactions, only eight of the cases are reported to have histories of behavior deviations of the type which might be encountered in case histories of neurotic patients.

The two orthopedic subgroups exhibited the following behavior: In relation to the other 75 disabled women, the patients with spastic paralysis reported having fewer dates with boys (although two of the most severely handicapped were married), and more of them were ambitious for self-improvement. The subjects with general orthopedic impairments showed evidence of greater dependence on parents, and less sex affectivity than the other disability categories.

The general conclusions of the authors are:

1. Different types of physical deviation are not distinguished by clearly marked personality manifestations.
2. Physically handicapped women exhibit hyposexuality approaching asexuality in some cases.
3. They were emotionally immature, showing great family dependence.
4. There is no evidence that auto-erotic or homo-erotic practices increase as a result of heterosexual frustration. This suggests that there is a general retardation in psychosexual development, rather than an interference with its normal expression.
5. Age at onset, severity, and stability of disability, and intelligence of subjects are related to kind and effectiveness of adjustment.

One of the main questions in evaluating this study relates to the representatives of the samples used. All psychological studies of disabled adults face a great difficulty in securing a sample population representative of the total population of such people with respect to personal adjustment and motivation. Many physically disabled adults become "lost" in the world of normal persons, and cannot be found easily for purposes of investigation. Others establish and retain connections with organizations which are concerned with the welfare of disabled persons, e.g., medical institutions, educational, employment, rehabilitation and other welfare agencies. These disabled persons are relatively easily secured for research purposes and it was from such sources that Landis and Bolles obtained their subjects. It seems improbable that the adjustment and motivation of these subjects are not in some respects crucially different from those of the disabled who cut all ties with institutions for the crippled.

It is common knowledge that some clients of public clinics have experiences which are greatly resented, as the interminable waiting, the detailed scrutiny of personal financial matters, the rigid routines, etc., which cause them to seek other medical attention. A number of informants have told us of such reactions on their part to some of the clinics from which the subjects of this investigation were secured. The basis for selection at such clinics is undoubtedly manifold; those who remain may be under greater financial pressure, may be less sensitive, more submissive, less intelligent, etc., than those who leave. In evaluating studies of the adult crippled, these possible selective factors must be continually kept in mind. The problem is undoubtedly much less serious with children, where personal motivation has less effect upon whether they are available in schools, hospitals, and clinics.

There is little internal evidence bearing upon the nature and extent of the selective factors which operated in Landis and Bolles' study. Although the intellectual level of most of the subjects was believed to be near normal, the socio-economic status of the subjects was low, and financial problems were acute for many of the women. Of the total group 17% were married. This may be compared with 29.5% of the female poliomyelitis cases in Lowman's survey (cf. p. 67), and 55% of the disabled female employees in Brighouse's study (cf. p. 69). These two groups were older on the average than Landis and Bolles' subjects, but neither of these studies supports the picture of hyposexuality given by Landis and Bolles. Brighouse has supplied additional, unpublished data that are strictly comparable with Landis and Bolles' data with respect to age and kind of disability. In Brighouse's study of 29 women aged 17 to 30 with cardiac impairments 55% were married, of 68 women 17 to 30 years of age with orthopedic disabilities 53% were married. There is the possibility, of course, that Brighouse's subjects were less severely disabled than those studied by Landis and Bolles. However, the latter found no relation between severity of disability and psychosexual immaturity, although they did find a relation between severity and poor social adjustment and emotional depression.

There is reason to question whether the control group of physically normal women was selected in a manner comparable with the selection of the disabled women. The normal women were secured from women's clubs, adult education groups, and recreational societies. Appeal was made for volunteers on the basis of the scientific importance of the study and the value of the physical and psychological examinations to the participants.

The authors say of the nonhandicapped group: "it must be stated that this group does not constitute a 'normal' population. . . . This group does not represent a random sample of the corresponding age group of the normal population of New York City." It seems obvious, too, that it differs from the handicapped group in ways which may be important. As we have seen, there is some evidence that the handicapped group was selected for submissiveness, hyposexuality, and emotional immaturity, while for the normal group no such selection is evident. It should be noted that while these selective factors would bring into serious question the meaning of the handicapped-normal comparisons, they would probably have little effect upon the intervariable relationships reported.

Lowman (56, 57) studied the personal, social, and vocational adjustment of former poliomyelitis patients of the Los Angeles Orthopedic Hospital.

The cases were chosen by drawing at random from the files of the hospital. The 203 male and 234 female subjects were between the ages of 16 and 42 years (89% were below the age of 31). They were predominantly northern whites (5% were Negro, Oriental, or Mexican). Of the total cases 60% had been crippled before the age of 6 years, and 77% before the age of 11. Defects that were readily apparent to others were present in 75% of the cases and in 48% defects were severe. The data consist of responses to a strictly controlled interview and relate largely to such "objective" characteristics as educational, marital, and employment status.

This is doubtless one of the most representative groups of disabled persons that has been studied, inasmuch as hospitalization of acute poliomyelitis cases is practically universal in the area where this study was made, and the occurrence of poliomyelitis is not related to the socioeconomic class of the patient (23).

Data which have some relevancy to adjustment are given in the following percentage distributions; more detailed information on employment is presented in Chapter VII.

	Marital status			
Sex	*Married*	*Unmarried*	*Divorced or widowed*	*Total group*
Males	23.7	73.5	2.8	100.0
Females	29.5	66.6	3.9	100.0

	Married or contemplate marriage	*Do not consider*	*No opportunity*	*Financial obstacles*	*Total group*
Males	27.7	44.8	18.7	8.8	100.0
Females	41.1	28.5	26.1	4.3	100.0

	Marital status	
Apparency and seriousness of disability	*Married*	*Unmarried*
Very apparent	34.2	54.5
Moderately or slightly apparent	34.2	39.8
Not apparent or no deformity	31.6	5.7
Total group	100.0	100.0
Severe disability	48.7	68.3

Self-estimation of employment opportunity	*Total group*
No restriction because of disability	17
Some restriction because of disability	52
Great restriction because of disability	31
Total group	100

	Employment status	
Apparency and severity of disability	*Unemployed* $(N = 104)$	*Employed* $(N = 134)$
Very apparent	42.3	37.3
Moderately or slightly apparent	43.3	40.3
Not apparent or no deformity	14.4	22.4
Total group	100.0	100.0
Severe disability	55.7	56.0

Self-estimation of extent of social life	*Total group*
None	7.1
Meager	14.0
Fairly normal	24.0
Satisfactory	38.3
Completely normal	16.6
Total group	100.0

	Sex	
Highest school grade successfully completed	*Males*	*Females*
Less than 8th	4.0	2.6
8th	5.4	3.0
9th, 10th, or 11th	40.4	40.4
High school	30.4	34.6
Freshman, sophomore, or junior in college	12.3	13.8
College	7.5	5.6
Total group	100.0	100.0

Most perplexing personal problem	*Total group*
Getting a job, making money, economic security	47
Feeling inferior, unpopularity	11
Family relations	5
Health	9
School progress	0.5
Other	7
No response	20.5
Total group	100.0

These data are admittedly meager in their indications of personal adjustment. However, they do present circumstantial evidence that these people are not ineffective or immature. The finding that only 26% of the women do not consider marriage, while 41% are either married or actively contemplate marriage does not suggest general psychosexual immaturity. While there are indications of some relation between severity or apparency of disability and marriage and employment, the relationship is not strong. The disabilities of the married persons are rated very apparent in 34% of the cases and as severe in 49%. Among the employed persons, 37% have very apparent handicap and 56% severe handicaps.

On the basis of these and other data, the author concludes that personality and social or vocational adjustment are not greatly dependent on physical normality or degree of deformity.

Brighouse (12), in a study that is reported in detail in Chapter VII, presents further pertinent data. Marital status was reported by 1,117 male and 698 female variously disabled employees of Lockheed Aircraft Corporation, as follows:

	Percentage married	
Type of handicap	*Males*	*Females*
All physically handicapped	61.1	55.1
Auditory	69.0	50.8
Cardiac	61.5	59.4
Hernias	78.3	
Orthopaedic	51.5	52.0
Respiratory	53.2	56.6
Visual	64.0	53.8
Multiple	68.0	52.4
Physically normal control group	71.0	49.0

The mean age of this group, 37 years, is greater than that of either Landis and Bolles' or Lowman's subjects; so a higher proportion married is to be expected. However, these data give no suggestion of immaturity in the sense of inability to make heterosexual adjustments. In fact it will be noted that the proportion of the handicapped women who are married is greater than that of the physically normal women of the same ages.[9]

Brighouse's investigation was carried on during wartime in an establishment working almost exclusively on military contracts. It was necessary, therefore, to make detailed investigation of the character of each applicant for employment. Applicants whose loyalty to the United States was questionable were not hired, but during the critical labor shortage applicants with a history of alcoholism, poor work, dishonesty, misrepresentation, and imprisonment were accepted for employment. The percentages of employees with such adverse character reports were as follows:

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[9] This is in line with the opinions of experienced vocational rehabilitation workers with whom we have talked. One of them remarked, "Show me a woman with a hair lip or a crooked back, and I'll place my money on her being married."

	Males	*Females*	*Total*
Physically normal control	14.1	7.0	11.5
Physically handicapped	15.1	7.2	13.0

When the physically handicapped are classified as to kind and severity of disability, the percentages with adverse character reports are as follows:

Moderate sensory disabilities (depth perception defects and partial deafness)	12.6
Severe sensory disabilities (total blindness, total deafness, deaf-mutism)	4.0
Moderate motor disabilities (sprains, strains, arthritis)	7.6
Severe motor disabilities (amputations, deformities, paralyses)	13.8

From these data it appears that the blind and deaf are relatively law-abiding and get few black marks against them; perhaps they are so limited they cannot get into trouble. However, the severely orthopedically handicapped individuals are at least the equals of physically normal persons in this criterion of asocial behavior and maladjustment.

Faterson (29) administered the Minnesota Rating Scale for measuring inferiority attitudes to all students entering the University of Minnesota and correlated inferiority attitude scores with degree of physical defect as recorded on each student's medical examination report. This scale contains 97 self-rating items relating to feelings of self-consciousness, sensitivity to blame, dissatisfaction with progress, remorse, etc.

A physical defect score was obtained by giving one point for each physical defect reported on the medical blank. Defects of the following kinds were included: fallen arches, menstrual disorders, heart murmurs, thyroid enlargement, poor posture, nasal obstruction, orthopedic defects, diseased tonsils, goiter, insomnia, tiredness, and gastro-intestinal and respiratory disorders. The coefficients of correlation between inferiority attitude scores and physical defect scores were as follows: for women, $r = .24 \pm .03$ ($N = 549$); for men, $r = .16 \pm .03$ ($N = 680$). The author interprets these correlations as verifying, in a very general way, the hypothesis that organic inferiority is at the basis of feelings of inferiority. However, it would seem that further analysis is necessary before this conclusion is justified. Faterson (28) elsewhere reports data which indicate that inferiority attitude on this scale is also related to socio-economic status. Students from the lower occupational classes have significantly higher inferiority attitude scores than students from the higher classes. Other research (48) has shown that physical defects increase sharply in the lower occupational levels. It may be, therefore, that the low correlations obtained are due to the effects of socio-economic factors, and that physique and inferiority attitudes are not otherwise related. At least, this possibility should be eliminated.

A number of investigators have reported upon the intelligence and educational progress of physically impaired children, namely, Lee (52), Nilson (77), Fernald and Arlitt (30). These studies agree in finding that crippled children test 5 to 12 I.Q. points below nonhandicapped control groups, and that they are retarded in school. However, the findings of Kammerer (46), Gates (36), Landis and Bolles (50), and Winkler (104) do not confirm these results.

Studies Reporting Partial Data and Conclusions

In Research Summary IV, pp. 110–117, reports of investigations giving less complete data and conclusions are abstracted.

Opinions of Experienced Workers with the Handicapped

Table 2 gives the frequencies with which 26 authors of general articles about the physically handicapped mention various behavior characteristics. The writers are pediatricians, orthopedists, teachers, child guidance workers, occupational therapists, physical therapists, social workers, and psychiatrists; all have had experience with physically disabled people.

Personal Documents by Disabled Persons

A number of personal documents written by orthopedically disabled persons are available, and some of these provide valuable data for the detailed analysis of the social-psychological situation of such people. The following appear to be especially valuable: Hathaway's *The Little Locksmith* (39) is without doubt the most sensitive account of personal experiences available. Barton's *And Now to Live Again* (5), while not so personal or intuitive, contains a stimulating account of problems of the disabled from the viewpoint of one who recently experienced a disabling injury. Carlson in *Born That Way* (15) presents the story of his experiences as a spastic, as does Hoopes in *Out of the Running* (42). Unthan in *Das Pediskrift* (101) gives a singularly rich account of the life of an armless man in the last half of the 19th century. We have applied the kind of analysis illustrated in the cases of Beverly and Marcia (cf. pp. 93–109) to these personal documents and have found it to be of value here too.

TABLE 2

FREQUENCY WITH WHICH DIFFERENT BEHAVIOR CHARACTERISTICS ARE MENTIONED BY 26 AUTHORS *

	Number of times mentioned
Feelings of inferiority	6
Compensatory behavior	5
Fear	4
Aggressiveness against normal persons as revenge for feeling of grievance	4
Feeling of being mistreated	3
Nervousness and anxiety	3
Seclusiveness	3
Feelings of superiority, advantage	2
Egotism, vanity	2
Self-pity	2
Paranoid complaints	2
Loneliness	1
Pedantry	1
Aggressiveness against benefactors	1
Feeling of frustration	1
Asocial behavior	1
"Use" crippled state	1
Fewer maladjustments than among normals	1
Overlook crippled condition	1
Variability of behavior so great no characteristics observable	1

* Sources: 6, 7, 9, 13, 16, 22, 24, 25, 27, 32, 34, 38, 44, 58, 60, 61, 63, 67, 74, 79, 84, 88, 90, 91, 93, 99.

Discussion

Although the evidence regarding the social behavior and personality of orthopedically disabled persons is not plentiful, a number of conclusions appear to be justified:

1. Personality tests of the inventory type have not differentiated between physically disabled and physically normal persons. The one exception (85) reveals a weak relation which may be due to uncontrolled, social factors.

2. Studies by means of interviews, observations, and reports of informants indicate rather consistently that physically disabled persons are more

frequently "maladjusted" than physically normal persons, although this is far from universal; instances of excellent adjustment in spite of both major and minor disablement are not infrequent.

3. Maladjustment appears in manifold forms. The following types of reaction have been described on the basis of observational or clinical data, but it is impossible to make any estimate of relative frequency of occurrence:

a. Withdrawing, retiring, reticent behavior
b. Shy, timid, self-conscious, fearful behavior
c. Serious, thoughtful behavior
d. Refusal to recognize real condition; concealment, delusions
e. Feelings of inferiority
f. Emotional and psychosexual immaturity
g. Friendless, isolated, asocial behavior
h. Paranoid reactions, sensitivity, suspiciousness
i. Craving for affection; love of praise, seeking of attention
j. Too high goals
k. Extremely aggressive, competitive behavior
l. Anxiety, tension, nervousness, temper tantrums

4. Good adjustment, when mentioned, is not often described in detail. The following sorts of good adjustment have been specified:

a. Compensatory behavior
b. Substitutive behavior
c. Suppression, overlooking of incapacity

5. Several correlates of maladjustment in physically handicapped persons are fairly well established, though none of the correlations are high:

a. Duration of disability
b. Severity of disability
c. Changing degree of disability
d. Overprotection or rejection in the home
e. Low intelligence

6. The nature of the disability is relatively unimportant, within wide limits, so far as behavioral resultants are concerned.

7. The situation in which a disability is acquired, e.g., battlefield or noncombatant action, affects the behavioral resultants in the immediately following temporal interval; long-time effects have not been studied in this respect, although experience with the traumatic neuroses would suggest that long-continued effects are possible.

8. Reactions to permanently disabling injuries change with the lapse of time.

9. Methodological implications for further studies are clear, namely:
    - a. Present-day tests of the inventory variety are not suited to this problem.
    - b. Clinical approaches, while more productive, should be supplemented by detailed descriptions of particular behavior in concrete situations, otherwise bias can easily warp judgments. Practically all psychiatric studies are impossible to evaluate since concrete, factual, supporting data are seldom given.
    - c. Normal control subjects are essential in view of the fact that standards of social behavior and personality have not been well established.
    - d. Because of the unknown selective factors operating in many sources of disabled subjects, adequate control groups are very difficult to secure.
    - e. The most adequate source of data at the present time appears to be identical twins, one of whom is disabled. In some ways, the four meager reports of such cases which have been discovered provide more insight into the nature and sources of the behavioral effects of physical disability than more extensive, but less well controlled, observations. The method by which Galton initiated this kind of investigation 63 years ago still appears to be the most promising.
    - f. The time has arrived when more experimental studies are required, i.e., studies which relate behavior to aspects of the disabled person's situation. Suggestions along this line are made in the last section of this chapter.

Attitudes toward Physical Disability

It is commonly accepted that the attitudes of others toward physically disabled persons have great influence upon their behavior. A number of the investigations provide data as to what these attitudes are, and a few give some indication of the attitudes of the disabled toward their own disability.

Parental Attitudes

Allen and Pearson (3) identify three sorts of parental attitudes toward crippled children which they consider distinctly harmful. These are: 1) inconsistent behavior involving careful provision for necessary physical care, together with resentment at the burden this entails (4 cases); 2) outright rejection of the child (2 cases); 3) overprotection of the child (4 cases). The authors believe it is in response to these parental attitudes that the behavior difficulties of crippled children arise, rather than as a reaction to physical disability as such. Desirable parental behavior is described as "objective", i.e., realistic acceptance of the child's behavior limitations with sufficient care and affection to provide security for the child, but not so much as to give rise to emotional dependency.

Kammerer (46) found evidence of overprotection, indulgence, or "spoiling" in 64% of his cases. He found these children to be slightly less well adjusted on the average than the remaining cases.

Landis and Bolles (50) report that 23% of their cases of physically handicapped adult women were still extremely dependent upon their parents in contrast to 6% of the normal group.

Meng (69) finds the early family situation of the physically disabled child to be crucial. He believes that physical impairment, as such, does not necessarily result in personality distortion, but that the treatment which such children often receive makes maladjustments probable. False sympathy, indulgence, severity and neglect are all frequent and unfortunate.

Coughlin (21) studied the attitudes of the parents of 51 orthopedically crippled children (5–20 years of age) who were patients at a public medical clinic. The families of these children were in the lower income groups, and most of them reflected foreign cultural patterns. Four categories of parental attitudes were identified on the basis of interviews and case history material:

1. Complete emotional acceptance of the child (providing him with security and protecting him from feelings of inferiority) together with a realistic intellectual insight into his physical condition, and medical and educational requirements.
2. Complete emotional acceptance of the child without full intellectual realization of the situation facing him.
3. Unfavorable emotional attitudes (oversolicitude, rejection or pushing beyond capacity) with adequate understanding of the child's physical state and educational and medical requirements.
4. Extreme ignorance of the physical requirements of the child together with destructive emotional attitudes.

No effort was made to determine the frequency of these patterns of attitudes, although the undesirable ones were said to be more frequently displayed by the mothers than by the fathers. Sources of destructive parental attitudes appeared to be emotional maladjustment, immaturity, and ignorance.

According to Lord (55) parents of school-age spastic children are more concerned about their child's mental and educational potentialities than about his physical defects. Parents are prone to try to compensate for the physical disability of such children by forcing intellectual attainments;

for this reason it is extremely important to get the parents to acknowledge realistic limits of educability at an early age. The effort to push a spastic child beyond his capacity is not only useless, but it subjects the child to an emotional strain which frequently leads to a disruption of the control already achieved. Lord finds that although occasionally one or both parents will frankly reject the responsibilities and strain which are inevitable accompaniments of the care of a severe spastic case, more often the difficulty arises from the effort of the mother to do more for the child than she can stand physically and emotionally. Lord believes it desirable that someone not emotionally involved in the case regularly review the procedures being followed so that the mother may be protected from useless self-sacrifice.

Rosenbaum (86) reports that the parents of a child with poliomyelitis often overindulge the child; when they find him becoming spoiled they may revert to excessive severity, which causes remorse. These alternating attitudes easily confuse the child.

Oettinger (78), on the basis of experience with a home teaching program, reports that most parents of severely disabled children are overprotective, though some drive their children to compensate in school work. Inexperienced teachers have to be convinced that physically distorted children are not mentally abnormal, too.

The attitudes of the parents of three of the pairs of identical twins previously discussed are quite clear. In two cases the parents favored the disabled twin. How extreme the favoritism was is not clear. In one case rather severe rejection of the disabled twin is obvious.

Miller (70) comments briefly upon the problems of crippled children arising from the different meanings of disability in various family cultures. For example, in New York City families in which Italian cultural influences are strong expect children to mature behaviorally at a young age. They frequently believe in the inevitability of illness, are suspicious of hospitals and medical care, and look upon physical impairment as a sign of evil. Disabled children in such families are faced with quite different situations from those, e.g., in upper middle class American families, in which children are protected until well into young adulthood, illness is considered an accident to be avoided, medical care is routine, and physical impairment is regarded as unfortunate but at least not openly as a moral delinquency. The problem of cultural differences in the meaning of physical abnormality has not been systematically studied. It would appear that this is a problem with an importance similar to that of cultural differences in the significance of sex and skin color.

Attitudes of Wider Groups

Mussen (72) and Mussen and Barker (73) have reported an investigation of the verbally expressed attitudes of college students toward cripples. Students were asked to rate cripples in general upon 24 personality and character traits. Ratings were made by checking a line, below which were descriptive categories varying from both extremes through "average" at the center, for example:

Disposition

Light-hearted constant bubbling gaiety	Generally good humored smiles easily full of fun	Average for the most part moderately cheerful	Tendency to be somber, serious less cheerful than average	Usually seems depressed, despondent, seldom smiles or laughs

The results indicate that the publicly expressed, verbalized attitudes of Stanford University students tended to be favorable toward cripples. The median ratings fall nearest the following descriptive phrases:

Conscientiousness: Tries harder than most
Self-reliance: Tendency to have more than average degree
Kindness: More than average
Emotional restraint: Tendency to be reserved; seldom lets the world know his feelings
Persistence: Quite persistent; gives up only after definite proof of impossibility
Mental alertness: Intelligent; more alert than average
Originality: Tends to be more creative than average
Religiousness: Tendency to be more religious than most people
Impulsiveness: Inclined to ponder possible results of behavior
Unselfishness: Marked tendency to be unselfish; generous, altruistic
Friendliness: Average
Trustworthiness: Average
Disposition: Average; for the most part moderately cheerful
Tolerance: Average
Courage: Average
Self-pity: Average
Social poise and tact: Average ability and interest in getting along with others
Vitality: Average amount of vitality, energy, pep
Self-confidence: Average
Submissiveness: Average amount of ascendance and submission
Realism: Given to reverie occasionally
Aggressiveness: Tendency to be mild; gentle in approach to people
Social adaptability: Finds it somewhat difficult to adjust to new situations
Sensitiveness: More sensitive than average

Subjects rated cripples nearest to their ideal upon religiousness, self-reliance, kindness, conscientiousness, emotional restraint, and unselfishness. They rated cripples farthest from their ideal upon social adaptability, sensitiveness, self-confidence, and self-pity. There were evidences of generalized attitudes or biases toward cripples. Some subjects tended to rate cripples very favorably on all scales, and others tended to rate them unfavorably on all scales.

This study must be interpreted in the light of the fact that it deals only with publicly verbalized expressions of attitude in a restricted cultural milieu.

Strong (98) in his study of the interests of 2,340 men between the ages of 20 and 60 presents data upon frequency of liking and disliking for people with a variety of physical and behavioral characteristics. The men from whom the data were secured were in the following professions and businesses: engineering, law, ministry, medicine, education, writing, Y.M.C.A. work, life insurance selling. The proportions of these men who liked, disliked, and were indifferent to physical peculiarities in people were as follows:

	Liking	*Disliking*	*Indifferent*
Sick people	22	28	50
Very old people	45	11	44
Cripples	29	19	52
Sideshow freaks	4	77	19
People with gold teeth	4	46	50
People with protruding jaws	6	42	52
People with hooked noses	4	38	58
Blind people	25	16	59
Deaf mutes	16	25	59

These percentages may be compared with the following:

People who borrow things	3	77	20
Negroes	13	32	55
Socialists	8	41	51
Athletic men	74	1	25
Conservative people	50	12	38

These data are not out of line with those of Mussen and Barker so far as cripples are concerned, i.e., a mildly favorable verbalized attitude is expressed. It is of interest to observe that the blind receive a similar, mildly favorable judgment, while a more unfavorable attitude is expressed toward deaf mutes.

Means (66) reports a study of the fears of 1,000 Alabama college women. These women listed anonymously a total of 349 separate sources of fear. Of these, 9.8% were fears of physical disability, illness, or medical treatment; 0.6% were fears of such occurrences to friends or relatives; and 0.6 were fears of persons with distorted physiques. These items were returned to the women for rating as to the intensity of the fears produced. The intensity of fears of disability and disease were rated, in general, above the median of all the fears listed, 25 falling above the median intensity and 11 below. The 10 most intense fears of physical defect in order of intensity were cancer, blindness, tuberculosis, burns, disfigurement, leprosy, venereal disease, deafness, crippling mutilation. Fear of disfigured people was 145th in rank order of intensity (29.7% of the total group indicating some fear), and fear of hunchbacks 273rd (11.1% indicating some fear).

Orgel and Tuckman (80) studied the nicknames of children living in an orphanage. Boys' nicknames referred to physical defects in 31.9% of the cases, and girls in 30.7%. Practically all such nicknames were derogatory and produced resentment and ill feeling.

Randall *et al.* (82) attribute the superficially good adjustment of hospitalized, World War II amputation cases in part to their being completely accepted by the hospital staff as ordinary persons. This good adjustment is also partly attributed to the attitudes of the other amputation patients who bring pressure against appearing depressed and dissatisfied, and in favor of light-hearted optimistic behavior.

Gates (36) made a survey of the opinions of 44 state directors of crippled children's services with regard to the social and emotional adjustment problems of crippled children. Of these directors, 21 expressed the opinion that such adjustment is a major problem in the education of crippled children, and 16 stated the opinion that crippled children's problems are more acute than physically normal children's problems.

Attitudes of the Disabled

Franke (33) studied the attitudes of 370 crippled school-age children toward their own disabilities. Most of these subjects lived in German residential institutions for crippled children. The children were asked to write on the question: Can I be satisfied with myself? They were instructed to finish with one of the following sentences: "I am not satisfied with myself," "I am rather satisfied with myself," "I am very much satisfied with myself." Subjects were allowed an hour for writing. The following results are reported:

1. Very small percentages mentioned their disability as having any

advantages. In a group of 50 children not living in residences for crippled, none mentioned advantages of their crippledness.

2. Boys were most negative toward their disabilities between the ages of 12 and 16 years. Girls, on the other hand, were most negative between the ages of 16 and 20.

3. Boys exhibited a more aggressive attitude toward their handicaps than girls. Boys more frequently compared themselves unfavorably with healthy individuals, while girls more frequently compared themselves favorably with even more severely disabled persons.

4. Most subjects ended their essay with the sentence, "I am rather satisfied with myself." The very few who ended with the sentence, "I am very much satisfied with myself" were of low intellectual ability.

Sohn (95) reports the case of a 19-year-old girl with an arm missing at birth who developed hysterical "phantom limb" symptoms apparently in response to her fears that she was not acceptable to men. She believed that no man would marry a girl with one arm, and that if one did he would be ashamed of her.

McKibben (64) reports her experiences as an adult spastic woman. She has found the idea that the body is the expression of the self so prevalent that a spastic person is placed in an almost impossible situation; he is excluded from contacts with others and even deprived of his own possessions on the grounds that others have more use for them. In view of this general subordination and degradation, the spastic lives in continual fear, and this in turn increases his tension and incoordination which makes him still less attractive.

Kammerer (46) found evidences of sensitivity and self-consciousness because of crippling in 54% of his cases.

Attitudes Expressed in Religious Practices, Fiction, and Humor

Indirect evidence of basic attitudes toward disability is found in each of these three forms of expression. In them there appears to be a mixture of ideologies explicit in more or less pure form in ancient Hebrew, Greek, Christian, and modern scientific thought.

To the ancient Hebrews, as their mores were codified in the Old Testament, illness and physical defect marked the person as a sinner; illness was considered both a punishment and a means of atonement. In Greek culture, on the other hand, while disease was odious, it was not an indication of sin but of inferiority. The sick were considered inferior beings and could expect consideration from society only so long as their condition was capable of improvement. The Christian doctrine introduced the view that disease is not a disgrace nor a punishment for sin but, on the contrary, a means of purification and a way of grace. Suffering perfects the sufferer. According to this ideology the sick have a preferential position, and it is a privilege for the healthy to minister to them. According to the scientific view, disabling diseases and accidents are the result of amoral natural conditions many of which can be understood and controlled (94).

Although we have been unable to study the problem in detail, it is quite apparent that in modern Christian religions, the meaning of illness and disability is a complex of Hebrew, Greek, Christian, and scientific influences. This is suggested by a cursory survey of the attitudes expressed in the writings and ceremonies of modern Christian sects. The same is true of modern fiction. For example, *Of Human Bondage* (Maugham), *Ethan Frome* (Wharton), *Dr. Jekyll and Mr. Hyde* (Stevenson), and *Mario and The Magician* (Mann) each interpret physical disabilities quite differently (59, 62, 97, 103).

We have made a survey of the frequency of jokes about physically defective persons. In five collections (17, 68, 108, 109, 110) including 6,909 jokes, 4.1% of the jokes were concerned with such persons. The percentage frequencies of occurrence of different physical characteristics in jokes about the defective are as follows:

Unattractive face	15.7
Fat	13.7
Deafness	11.0
False teeth	8.0
Stuttering	7.0
Baldness	6.3
Freaks	5.0
Large feet	3.0
Wooden leg	3.0
Cross-eyedness	2.7
Nearsightedness	2.0
Thinness	2.0
Beard	2.0
Blindness	1.7
Large nose	1.7
Unattractive figure	1.7
Gold teeth, defective teeth	1.3
Small stature	1.3
Crippledness, left-handedness, spectacles, large ears, glass eye, one arm, big stature, color blindness	1.0 or less

Disabled persons are clearly deprecated in 80% of the jokes. Only a single joke in this series places a disabled person in a superior position. In the remainder the attitude expressed toward disabled persons is neutral, or the significance is not clear. Although the jokes in these collections frequently deprecate the persons to whom they refer, this tendency is stronger with jokes about the disabled than with jokes about some other classes of persons. For example, jokes about farmers, salesmen, judges, and dentists deprecate the subject of the joke in 49% of the cases.

Study of the social significance of physical disability by evaluating the characteristics assigned to persons with such disabilities in spontaneous writings would seem to be a distinct possibility. Fiction, drama, and humor are full of such references. It is possible that secular trends could be traced in this way.

Sources of Attitudes

An unusual document has been written by Lindsey (54) giving an autobiographical account of her behavior as the mother of a congenitally orthopedically defective child. Before the baby was born she felt that "the worst grief which could befall a human soul would be the consciousness that it had brought into the world a child who was handicapped either physically or mentally." There is abundant evidence that the extreme solicitude shown by the mother for her defective child was founded upon this feeling of guilt.

Yugend (107) presents some examples to show how a parent's unsolved problems often determine his attitudes toward a disabled child.

Rosenbaum (86) attributes the oversolicitude of parents of handicapped children to their feelings of responsibility and guilt for the occurrence of the disability.

Meng (69) believes that fear and avoidance of physically disabled persons by the nonhandicapped are widespread. This he attributes to three deep, often unconscious, mechanisms: 1) belief that physical distortion is a punishment for evil; hence the belief that a disabled person is evil and dangerous; 2) belief that a disabled person has been unjustly punished and therefore is under pressure to do an evil act in order to balance the injustice; hence the belief that he is dangerous; 3) projection of one's own unacceptable desires upon the disabled; hence the belief that he is evil and dangerous.

Winkler (104) proposes an interesting theory of the causation of attitudes toward physically impaired persons, and presents some relevant experimental data. Because of the unusual postures and movements of the crippled, he says, there is little possibility that physically normal individuals can establish an empathic relationship with them. For this reason the crippled person serves as a strange, disturbing emotional stimulus, and the behavior aroused is that of suspicion and aversion. To test this hypothesis, Winkler displayed action pictures of healthy and crippled children to 200 physically normal subjects who were to judge them with respect to character and personality traits. No reference was made to the fact that pictures of both crippled and normal children were included. As a consequence, some of the crippled children were not consciously recognized by the judges as being crippled. Unfavorable judgments of pictures of normal children constituted 46% of all judgments, while 60% of the judgments of pictures of crippled children *who were not recognized as crippled* were unfavorable. The assumption is offered that the postures of the crippled children, though not sufficiently peculiar to be consciously recognized as crippled, served as a stimulus for an unconscious negative reaction. While the statistics of this investigation leave much to be desired, the work of Wolff (105) and Huntley (43) add weight to the possible correctness of Winkler's finding. If further research should confirm these results, they would constitute highly important facts in arriving at an understanding of the psychological significance of crippling.

Summary. By way of summary, it is possible to point out several rather definite trends in data on attitudes toward physically disabled persons.

1. Public, verbalized attitudes toward disabled persons are on the average mildly favorable; an appreciable minority openly express negative attitudes.
2. Indirect evidence suggests that deeper unverbalized attitudes are more frequently hostile. This is a point that requires further investigation.
3. The evidence is rather clear that the attitudes of parents toward their disabled children tend to be extreme more often than toward normal children, centering about the following patterns: oversolicitude, rejection, pressing for accomplishments beyond the child's abilities, inconsistent attitudes. Overprotection appears to occur more frequently than overt rejection.

4. The speculation has been advanced that some favorable attitudes and some oversolicitousness on the part of parents mask deep, inadmissible hostile attitudes.
5. The attitudes of disabled persons toward their own disabilities have been inadequately studied. What evidence there is suggests that negative attitudes are frequent.

Theories of the Somatopsychological Effects of Physical Disabilities

A number of theories of the way physical disabilities influence behavior have been proposed. Most of these theories are frankly speculative, and none of them is stated in terms which allow for experimental verification; clinical cases have been offered to exemplify most of them, although adequate controls have not been provided. It is difficult to compare them systematically since they often deal with radically different kinds and degrees of disability, and with quite different levels of personality organization. The four most completely developed theories are described below in some detail, and the less completely developed are briefly summarized (pp. 89 ff.).

The theory which would seem to be most applicable to this problem is Adler's theory of the organic basis of neurotic behavior. However, a detailed consideration of this theory reveals that its importance in this connection is more apparent than real. While the early writings of Adler assumed an unknown, direct, neurological connection between inferior organs and central nervous compensatory mechanisms (1), in the later development of the theory this organic basis became more and more tenuous (2). A purely psychological drive for mastery or protest against inferiority of all sorts became the central feature, although the reference to the organic basis of inferiority feelings remained. As developed by Adler, the theory was untestable inasmuch as criteria of organic inferiority or compensatory behavior were never established. Levy (53) investigated sensitivity of children to various aspects of their own physiques, and found that almost all the children believed they were physically deficient in some respect. Obviously, such a ubiquitous factor cannot be used, in itself, to account for the great variety of human adjustments. As the theory developed, almost any physical characteristic could serve as a basis for feelings of inferiority; and the theory became more and more psychological until finally it had little more relation to organic conditions than other theories. Despite this, numerous investigators have presented their data in terms of a crude Adlerian hypothesis to the effect that physical disability should be accompanied by inferiority feelings and compensatory behavior. These investigators find that both compensatory behavior and inferior attitudes do occur in physically disabled persons, but that they are by no means of universal occurrence. Some investigators question whether these symptoms are any more frequent than in the general population. This does, in a way, confirm Adler's later view that the physical basis of adjustment is very complex and indirect. However, the data have to be interpreted with caution, inasmuch as a wide variety of behavior is called compensatory, and there is little agreement between different investigators as to what should be included.

Among the Freudians, Meng (69) has treated the problem of physical disability most extensively. According to him, even the most serious physical disability does not necessarily result in a distorted personality. Although there are often factors in the environment of a crippled person which tend to produce distortion, other factors operate at the same time to lessen the probability of its occurrence. Some of these factors are as follows:

1. Narcissistic satisfactions are commonly experienced by disabled persons. Defect and pain give the handicapped person a claim to approval and attention, even to admiration. Merely the fact of being different supplies some narcissistic satisfaction. The disabled person, therefore, is usually free from this obstacle to desirable personality development. He is a person of some importance by virtue of his peculiar physique. This is particularly applicable to the disabled adult. In the case of the disabled child, the actions of adults frequently tend to prevent the development of a normal childish narcissism. Spoiling or overindulgence, on the one hand, and neglect or rejection, on the other, both have this effect. These reactions on the part of adults frequently result in prolongation or shortening of the period of dependency, both of which are unfortunate for the desirable development of the ego.

2. With the disabled child, the difficulty of engaging in normal play activities is a serious obstacle to normal development. This prevents the natural development from the pleasure-principle to the reality-principle. Because of this, one frequently finds young handicapped children who are already little adults. They have come to the verbal stage too early, and their understanding is superficial; they have little contact with reality.

3. Although overcompensation frequently occurs in disabled persons, the conditions under which this arises are quite different from those

assumed by Adler. The cause, according to Meng, lies much deeper. The child feels himself inferior only when he is not loved, or when love is withdrawn. Organic inferiority does not have the etiological significance for the development of neuroses which Adler claimed, but because of the frequent tendency to over protect or to reject crippled children, inferiority feelings are common.

4. The physically handicapped person easily becomes hypochondriacal for two reasons. First, it is easier for the healthy person to forget his body than for the sick. A defect in any part of the body emphasizes the libidinal attachment to that part, and the more the social environment rejects or indulges the child, the greater the cathexis will become. Secondly, the handicapped person who has other anxieties will tend to transfer them to the bodily handicap.

5. All young children believe that their parents are supreme; that they are the givers and the takers-away. When this is carried over to older ages, it gives rise to fatalistic superstitions and paranoid beliefs. Physically handicapped children, likewise, have this belief. They are likely to blame their parents for their handicap, which gives rise to hostility and frequently to disapproved actions. Because they have been bad the disability is justified. It is more likely, however, that these hostile impulses will be repressed, laying the basis for anxiety and accompanying guilt feelings.

6. A similar mechanism is behind the frequent fear and antagonism which normal persons have for the physically disabled. They unconsciously believe that the cripple has committed some evil action and is therefore dangerous; or, if he has not committed an evil act, that he will do something wrong in order to warrant his punishment; therefore he is still considered to be dangerous.

Shakespeare expresses this idea in *Henry VI:*

> Then since the heavens have shaped my body so
> Let hell make crook'd my mind to answer it.

7. Meng finds no indication that the physical disability increases the castration complex. He thinks it probable that the physically handicapped are not fearful of castration since they have already experienced it.

8. Adaptation to reality is in some ways easier for physically impaired persons, and in some ways more difficult. It is easier in that less is demanded of them, and more difficult in that more effort and self-control are usually required to fulfill the demands which are made. In fact, every handicapped person has to become a virtuoso in those activities

in which he is limited. To achieve this virtuosity requires a great deal of time. Not only must he have perseverance and insight, but his environment must be protective, self-sacrificing, strong, and secure. It depends in part upon the environment, therefore, whether he can reach his goal. Interference with achieving this virtuosity has all the results it has for the real virtuoso: irritability and sensitivity against disturbance. He lives in fear that he will not be able to achieve his perfection. Achievement gives great satisfaction; failure injures narcissism greatly.

9. The chief task of the parents and teachers of handicapped children is to diminish the anxiety of the child. This can be done by bringing to consciousness the child's blame of his parents which is at the basis of his partly repressed hostility and his guilt. To some extent the blame and guilt may be avoided in young children if expression of it is encouraged and reassurance given at an early age. The second task is to avoid premature, superficial development by providing opportunities for play. The provision of motor outlets for both handicapped children and adults is extremely important. In this connection the following proverb is apt, "The head is quickly filled, but the forming of the heart takes time." Finally, the cripple can often be helped to set realistic goals. Self-contentment will only come if he sets goals of the maximum difficulty achievable by him; to do less leads to depression and apathy; to attempt more causes frustration and injured self-esteem. To do this, the cripple must first accept his defect without jealousy of others and without making extravagant demands upon them. He must be helped to relinquish unnecessary support and protection from others. Above all, the handicapped person has to give up the idea of fate being just.

In conclusion, Meng says:

> We do not think that the normal human being is the one whose motor and mental abilities function effectively, but he is the one whose psychological activities run in a harmonious way; he conquers life anew each day. This is possible for the handicapped in his own way, and it can be aided by mental hygiene. 'Everyone must carve his life out of the wood he has.'

Schilder (89) and Bender (8) propose a theory to account for some of the psychological disturbances which accompany somatic distortions. In the monograph, *The Image and Appearance of the Human Body,* Schilder presents a detailed study of the way the image of the body is built up. To Schilder, this image means the picture of the body which is formed in the mind, i.e., the way in which the body appears to the self. The monograph surveys a great amount of clinical, experimental, neurological, and psychological material bearing upon the question of the peripheral and central neurological origins of this experience. Schilder considers the awareness of one's own body to be one of the most immediate and basic facts of mental life and to involve quite different processes from one's awareness of the outer world. In this he agrees with Wernicke whom he credits with distinguishing three central problems of psychology: that of the *somatopsyche* (body image), that of the *allopsyche* (outer world), and that of the *autopsyche* (inner self).

Normally, there is no discrepancy between the body image and the body structure. But discrepancies may be introduced by peripheral and central neural lesions, and by somatic disease. In the case of somatic disease, the image of the body normally changes as the body is changed. But under some circumstances, modifications in the body structure may occur without corresponding changes in the body image. This is said to arise in the case of slowly developing chronic diseases which gradually change the body structure. Bender (8) considers the behavioral results of this discrepancy. When this occurs, there is a thwarting of the social, vocational, and heterosexual behavior which is appropriate for the body image, but which cannot be realized by the distorted body structure. This leads to conflict, emotionality and fantasy, and delusional processes. There is also, frequently, a failure to comprehend the nature of the insidious disease which has not been observed by the patient in any one but himself. This leads to paranoid symptoms. Delusional systems of the following sorts are reported: 1) delusions denying any change in physique; 2) delusions explaining the disease condition; 3) delusions that the disability has been removed; 4) delusions with substitute phantasies. Bender considers extreme cases which exhibit psychotic symptoms, and she believes that the mechanisms of these psychoses are demonstrably similar to those described.

It is interesting to note that Landis and Bolles found that some of their nonpsychotic disabled women also denied their disability. In the "obliterative reaction," subjects tended to repress any conscious recognition of their disability and to refuse to admit that they were incapacitated in any way. Landis and Bolles assert this to be the most satisfactory type of adjustment exhibited by the women of their group. It may be that as long as the discrepancy between the actual disabled body and the desired, normal body is not so great that a semblance of normal behavior is impossible, the obliterative reaction leads to satisfactory adjustment. While if the discrepancy is so great as to lead to a marked dissociation between reality and desire, maladjustment results, which in extreme cases becomes delusional.

Würtz (106) on the basis of case studies of individual cripples, claims that interference with neural integrity and natural movement affects the basic personality of the individual unless substitutes are developed. The cripple is constrained to adopt unnatural postures and tense positions which interfere with his normal expressive movements. According to Würtz, the most important factor in the adjustment of the crippled person is the development of freedom of movement which will substitute or compensate for that which is restricted. His stock example is Byron who with a clubfoot and unstable parents was nevertheless relatively well adjusted because he developed his bodily expression in all kinds of sports. Without this outlet, Byron would have been far more neurotic, according to Würtz. Where the handicap does not permit such feats as Byron's, all possible substitutes for free movement, such as rhythms, music, singing, bicycling, and exercises are desirable. Würtz points to the relationship between speech and handedness as an example of the functional connection between peripheral movement and cortical activity. He recommends "stump exercises" for armless cripples as a means of stimulating the muscles and peripheral nerves of the stump, and the otherwise dormant central motor areas. Equally important with physical movement, according to Würtz, is "social movement." Overprotection is disastrous. The child who lives in an artificial Ghetto with inhibitions upon freedom is forced into maladjustment.

Theoretical positions of other authors may be briefly summarized:

Allen and Pearson (3): The parents of a crippled child are more prone than parents of a physically normal child to overprotect or to reject him, or to do both. It is from these attitudes that the child's difficulties arise. Undesirable behavior is an attempt to retain a privileged position or to obtain emotional acceptance from the parent. The proneness of the parent of a disabled child to act in these extreme ways arises from genuine sympathy, from feelings of guilt at having produced a defective child, from resentment at the trouble the child causes, and from resentment at the social stigma attached to him as a parent of a defective child. These feelings are frequently present simultaneously, giving rise to inconsistent, conflicting, and emotional behavior in the parents. Mental hygiene should begin with the attitudes of the parents at the time of occurrence of the disability in the child.

Lord (55): An important source of maladjustment in children with cerebral palsy lies in the discrepancy which is likely to arise between the plans and goals the child establishes and the defects which make their achievement impossible. Mental hygiene has the problem of reconciling the motivations and the physical limitations of the child.

Lowman (56): There is a strong tendency to judge personality on the basis of physique. Some handicapped persons, therefore, find themselves without social status. This lack of personal valuation easily leads to evasion, self-deceit, and attempts at compensation in an effort to gain the recognition which cannot be achieved in reality and to avoid the social ostracism that cannot be accepted. Essential for good adjustment are a sense of security, acceptance by a group, and successful achievement. To attain these, social, economic, and educational advantages are almost necessary for the disabled person. In some respects, severe apparent disabilities are less hazardous than minor ones. The individual with a major deformity is obliged to face the situation; it is more difficult for him to be dishonest with himself and avoid readjusting his values in the light of the reality that he must meet.

Kanner and Lachman (47): One-sided approaches to the understanding of the effects of disease upon behavior should be avoided. The following factors have to be considered: 1) nature of the illness, 2) child's personality, 3) parental attitudes, 4) influence of the physician, 5) a great variety of specific factors. How these factors may operate is not indicated.

Landis and Bolles (50): Psychosexual and emotional immaturity, and general inadequacy of adjustment are frequent among disabled women; however, they are not neurotic. This, then, constitutes an important exception to psychoanalytical theory that deviations in pyschosexuality and neuroticism are inevitably correlated. No suggestions as to how physical defects operate to cause psychosexual and emotional immaturity are made. On a more superficial level. Landis and Bolles state that the social and economic restrictions experienced by the disabled are the major sources of frustration, and that to this four types of reaction occur: withdrawal; substitute behavior; obliterative behavior, i.e., ignoring of limitations; compensation.

Von Baeyer (4): The predominant psychological situation of the cripple is a tension between his inferiority feelings calling for withdrawal and his compensating tendencies calling for aggression. This conflict keeps him in a constant state of tension; he can never quite reach a resolution and escape fully from his crippling.

Winkler (104): Physical disability interferes with the drive for self-assertion leading to defensive mechanisms or withdrawal.

Jenkins (45), *Newell* (76), *Bradway* (11): The studies of twins imply a theory of disability based upon parental attitudes. In the one case of clear-cut rejection (Newell), the child unsuccessfully attempted to achieve security, with consequent self-depreciation, paranoid reactions, nervousness, and unhappiness. In the case of complete acceptance (Bradway), the disabled child is reported to have been well adjusted, and her relatively neglected, physically normal twin is reported to have exhibited aggressive attempts to achieve a similar acceptance. The remaining case is not so clear (Jenkins). It is reported that the disabled twin was favored by the mother, but actively subordinated by the sister. In this contradictory situation the child exhibited a withdrawing reaction.

Clark (19): The ego is the central organizing and directing unit, and the whole body structure must be considered a major part of the ego. The ego's response to a loss of part of its organic structure involves some emotional compensation and some sense of weakness and inferiority. The tendency may be to fixate emotional energies on special needs so they are not available for mental development; or the tendency may be to impound an excessive amount of libido within the personality as a protective agent for the weakened ego. This may take the form of a primary narcissism which may block the urge to ingest knowledge from the outside world.

Kubie (49): The importance of a disability is determined by the interplay of at least three aspects of experience: the reality level, the level of conscious fantasy, the level of unconscious fantasy and feeling. In every experience all three levels play some role, but in varying proportions. Where the reality level plays a preponderant role, the response will be normal, simply because it is adjusted to reality. Where the unconscious and symbolic meanings are dominant, all the phenomena of neurotic deviation will be encountered. In this latter case the loss of a limb may have several meanings as follows. It may be the realization of a long-awaited punishment for lifelong guilt feelings, in which case relief from anxiety symptoms will occur. The same injury may confirm a lifelong dread of the vulnerability of the body, of impending total destruction giving rise to panic or depression. Or it may signify that secret feeling that the body is loathsome and evil and has been exposed to publicity, resulting in feelings of guilt and shame.

The following tabulation gives the frequencies with which various sources of behavior of crippled persons are mentioned by the 26 authors cated are as follows:

Rejection by others	10
Inability to meet the demands of situations	7
Overprotection	5
Conflict between need for dependence and desire for independence	1

The frequencies with which various ameliorative procedures are advocated are as follows:

Provide abundant emotional support, approval, and encouragement	9
Teach independence, help face the reality of the situation	8
Provide channels for self-expression	3
Avoid competition with normals	3
Provide vocational opportunities	3
Emphasize intact abilities rather than defective ones	2

Three of these writers express the opinion that mild physical handicaps lead to more severe behavioral maladjustment than severe physical handicaps, while two state the reverse. One writer believes that the siblings of a physically disabled child are frequently less well adjusted than the handicapped child because of jealousy over the special attention the cripple is likely to receive.

By way of summary, the conditions and mechanisms which have been proposed to account for the psychological effects of physical disabilities may be listed:

1. Compensation for inferiorities (Adler)
2. Easy narcissistic satisfactions deriving from pain and uniqueness (Meng, Clark)
3. Lack of normal play and expressive actions (Meng, Würtz)
4. Easy cathexis to disabled part (Meng)
5. Unrelated anxieties transferred to bodily handicap (Meng, Stafford)
6. Blame of parents (Meng, Allen and Pearson)
7. Feeling of guilt for hostility toward parents (Meng, Winkler)
8. Body image at variance with reality (Schilder, Bender)
9. Efforts to achieve social acceptance (Meng, Lowman, Allen and Pearson)
10. Dependent, demanding, apathetic behavior deriving from oversolicitous, protective situation (Meng, Allen and Pearson)
11. Variable, conflicting behavior in response to variable, inconsistent attitudes of others (Allen and Pearson)
12. Goals beyond achievement possibilities due to pressure from parents, and to physical, social and economic restrictions (Lord, Landis and Bolles)
13. Conflict between withdrawal and compensatory tendencies (Von Baeyer)
14. Acceptance of disability as a punishment for sin (Winkler)
15. Retaliatory behavior for "unjust" treatment by nature (Meng)

There will be no disagreement with the conclusions that our understanding of the somatopsychological effects of physical disability is far from complete at the present time. About all that can be said with certainty is that both deep, often unconscious, personality mechanisms and more superficial adjustment processes are involved. What these mechanisms are and how they operate can be comprehended in only general, common sense terms. Progress in elucidating the central mechanisms involved must await increase in knowledge of personality organization. There is great need for increased precision of definition and increased exactness of prediction in order that hypotheses may be tested. Because of the vague nature of our concepts at the present time, a number of the theories proposed can probably account for the general behavior of disabled people equally well. None of them is sufficiently exact to be disproved; and statement in a form that allows for the possibility of disproof if the theory is not true is one of the marks of an adequate theory.

Although increased precision of conceptualization is at present impossible with respect to the more obscure mechanisms of personality, some progress in this direction seems possible at the more peripheral levels. This is particularly true with respect to the larger social psychological situation of the disabled person.

In the discussion that follows we have attempted to define more exactly than has heretofore been done the social psychological situation of two disabled college girls, and from this analysis to account for their behavior. This is in no sense an experimental verification of the concepts and analysis made. We believe, however, that experimental testing of the concepts is possible. It should be emphasized that we deal, here, only with the general community situation of these girls. The detailed, family situations are considered only insofar as they influence the larger situation, and personality mechanisms are included only implicitly as they contribute to each subject's perception of the situation which confronts her.

The Cases of Beverly and Marcia

We present below, in summary form, the facts about these girls' physical states, social environments, and behavior that we have gleaned from their writings, their responses to written and oral questions, and informal interviews.

	Beverly	*Marcia*
Date of study:	1941	1941
Age at time of study:	20	19
Occupation:	College sophomore	College freshman
I.Q. (Stanford-Binet):	120	115
Physique:	Poliomyelitis at age 8 affected left leg.	Poliomyelitis at age 9 affected both legs. The degree of motor disability of Marcia is greater than that of Beverly.
Health:	Excellent	Excellent
Physique and its direct effect on behavior:	Poliomyelitis at age 8 permanently affected her left leg. At 20, she wears a heavy brace, and a special shoe with lifts. She has no control of the muscles below the knee. Her leg fatigues rather quickly. Her locomotion is affected by limiting her to a slow stiff-legged	Poliomyelitis at age 9 permanently affected both legs. At 19, she wears braces on both legs, special shoes, and uses two crutches. She has little control of her muscles below the hips. Her locomotion is very slow and awkward. She can use stairs only if there is a strong side rail. Her disability is socially ob-

walk for relatively short distances. Her disability is always obvious when she walks and often so when she stands.

Social situation: Although away at school, Beverly has very close ties with her family and home town of 2,500 people. Her family is influential in the community. Her father was executive of a governmental institution having the largest payroll in town. Hers is one of the few families in which all the children have attended college. She is very proud that her family has achieved this position in the community and maintained it despite the financial difficulties since her father's death. Her family and the community are proud of Beverly. They have tried to treat her as normal, and to give her no special privileges, despite her being the baby of the four children and having a physical handicap. They have admired her gameness in accepting this role and have given her plaudits, e.g., the American Legion medal for an all-round girl. Although Beverly and her family have been a success in the home town, their position is not secure. The family is insecure because of financial difficulties, and Beverly because of her physical disability.

Beverly does not participate in the social life of the college, she virtually has the role of a visitor. She is congenial with her dormitory mates, but has no close friends at school; she has set no goals in the social hierarchy of the college community.

She receives financial aid from the State Board of Vocational Education.

vious when she sits (because of her braces she sits in an unusual posture), stands or walks. Marcia's disability is much more severe than Beverly's.

Marcia's social situation is in most respects at the opposite pole from Beverly's. She is an only child, and has weak ideological and affectional ties with her lower middle class family who live in a large city. Marcia has never been a member of a stable community group. Her family has moved from apartment to apartment, and for years at a time, they have not known who their neighbors were. Her parents have close ties with the church, but Marcia has broken with this group. Her family is not mobile, she has never had any social position either to be proud of or insecure in. Not since the age of 9 has she been considered normal; the demands and expectations made of her have been very special; she went to special schools with other crippled children. Marcia has been accepted by three groups temporarily: a radical social and political group, a group devoted to improving the welfare of crippled school children, and a group trying to secure a better municipal college.

Marcia's position in the college community is very similar to her position in her home community. She has no social position to maintain, she belongs to no groups.

She receives financial aid from the State Board of Vocational Education.

Behavior:

1. *Goals and aspirations:*

(a) To graduate from college, in order to	(a) To make satisfactory grades and
(b) satisfy her mother's expectations, and	(b) have a pleasant time at the university, while
(c) get a job (probably secretarial) in order to	(c) preparing for social work, in order to
(d) become self-supporting for a short time before	(d) put into effect her ideas on the education and employment of the handicapped.
(e) getting married to a man who will provide	(e) Marry her boy friend and
(f) an upper middle class home and social status (house in the suburbs, membership in the country club), and	(f) have a congenial time with him while
(g) financial security.	(g) helping him to complete his engineering training and promoting her own "causes,"
(h) Two children (boy and girl) of whom she can be proud.	(h) seeing and enjoying her parents frequently and
(i) To be normal in every respect,	(i) having many friends.
(j) to be happy.	(j) Have one child,
	(k) help in establishing a United States of the World in which there could be
	(l) more equal distribution of goods, religions and race tolerance, free education, democracy practiced to the letter, and
	(m) a citizenry imbued with a love of truth and intellectual honesty.
	(n) To be successful in her field,
	(o) to be happy.

2. *Relative valuation of 18 personality characteristics and environmental conditions:*

Most highly valued: husband, good health, having children, good disposition.	educational advantages, high intelligence, self-confidence, vitality.
Least valued: religious faith, family background, good looks, self-confidence.	religious faith, family background, having children, good physique.

3. *Attitudes toward crippled persons as expressed on a series of rating scales.* Characteristics on which crippled persons are rated as superior to the average:	
less selfish, more courageous, more artistic, more sympathetic, more enthusiastic, less impulsive, more conscientious, more persistent, more optimistic, seek sympathy less often, more intellectually creative.	more courageous, more sympathetic.
Characteristics on which crippled persons are rated as inferior to the average:	
more cynical, more introverted, more unhappy more worried, less friendly, less self-confident feel inferior more frequently, dislike cripples more frequently.	more selfish, more cynical, more introverted, less energetic, more unhappy, more neurotic, less enthusiastic, less friendly, have less social poise, more spoiled, less optimistic, more unrealistic, less stable emotionally, feel inferior more frequently, dislike cripples more frequently.
In informal expressions of opinion Beverly is usually disparaging of cripples. This is usually accompanied by expressions of personal dislike.	
4. *Attitude toward being classed with cripples herself:*	
Beverly actively resists anything that calls attention to her crippled condition or that identifies her with cripples.	Marcia actively identifies herself with cripples.
Examples:	
(a) "I hate that word 'cripple.' I hate cripples. I wouldn't go to a special school for cripples under any circumstances."	(a) She went to a special school for crippled children from which she later withdrew because she thought the education was poor.

(b) She resisted wearing a brace and a special shoe for some years. For a time she went about supporting herself with her hand on her left knee.	(b) She has espoused the cause of crippled children by appearing before the Board of Education.
(c) She finds an English class very disagreeable in which she has to walk to the front of the room and give oral reports.	(c) She plans to devote her professional activities to the welfare of cripples.
5. *Self-protective behavior:* Beverly consciously tries to protect herself from failure and disappointment.	Marcia takes chances, sets uncertain goals.
Examples:	
(a) "I always look on the worst side of things and am glad it doesn't turn out so (in most cases). I do this because I know I am a poor loser and hate to take setbacks, so I always try to put myself in a position where I am less apt to be hurt."	(a) Greatly elated when a surgeon held out some hope for benefit from another operation.
(b) She does not participate in student activities or go with boys.	(b) Would like to take part in student activities if she had the time.
(c) She tries not to express her opinions to strangers or casual acquaintances.	(c) Holds and expresses opinions on social questions with which many people disagree.
(d) She is receiving physical therapy treatments but expects no results from them.	
6. *Attitudes toward receiving special consideration because of physical disability:* Beverly tries hard to avoid receiving special consideration from others.	Marcia takes special consideration as a matter of course.
Examples:	
(a) Wore herself out on a walk with some girls because she did not want them to stop on her account.	(a) Accepts rides to class in students' cars whenever offered.

(b) Greatly annoyed at a boy for holding the classroom door for her.	(b) Gladly accepts rehabilitation aid; on very good terms with rehabilitation worker.
(c) Will not go on a blind date because the boys might feel they had to go through with it.	
(d) Starts to class from the dormitory earlier than she needs to, and before anyone else, so the girls will not feel they have to walk slowly with her.	
(e) Accepts state rehabilitation aid with greatest reluctance, and only because it would be harder for her mother if she did not.	
(f) She dislikes people who stand around trying to help her get off buses.	
7. *Attitude toward sympathy and encouragement of others:* Beverly greatly resents sympathy.	No evidence noted for Marcia.
Examples:	
(a) "Many think me courageous. To me this is exasperating for anyone to think differently of me when all I do is exactly what any normal person would do."	
(b) "I could dance, but I won't, because people might feel sorry for me."	
8. *Judgment of others' motives:* Beverly is very suspicious of others' motives.	Marcia accepts others' actions in good faith.
Examples:	
(a) She was invited to the senior ball in high school, but she thinks the boy who asked her was bribed to do so by a friend of her family who provided the boy with a fine car for the evening.	(a) On good terms with rehabilitation worker.

(b) The doctor has told her not to read so much, but she thinks this is a ruse to push her out socially.	(b) Grateful for advice of counsellor to abandon pre-medical course.
(c) Greatly annoyed at rehabilitation worker for investigating her case so thoroughly. Thinks the worker suspects some fraud. Beverly sends in her original grade reports and expense receipts as she thinks the worker will not believe her report.	
9. *Interest and participation in physical activities and sports:*	
Great pre-occupation with sports of all kinds.	Less interest than most college students in sports.
Examples:	
(a) Frequently mentions that before her illness she was an acrobat, in referring to the fact that her father taught her gymnastic tricks, which she practised and exhibited before friends.	(a) Would like to go to the football games if it didn't cost so much. Went to two or three sports events during the year.
(b) Before and after her illness was known as a tomboy, climbed trees, rode a bicycle.	
(c) Played tennis throughout high school and at the university, until she got so heavy her braces would break with such usage.	
(d) Attends all athletic events at the university with great regularity—including such minor sports exhibitions as gymnastics and fencing. Knows in great detail the special skills of numbers of performers.	
10. *Relation to family:*	
Beverly is very sensitive to her mother's wishes.	Marcia is developing a friendly, independent relation to her parents.

Examples:	
(a) Feels guilty because she does not mix socially at school as her mother would like her to.	(a) Disagrees with parents on religious matters completely.
(b) "The last thing I would do is let my mother know how I hated school, since she set her heart on my going."	(b) "I have often had the feeling that the sooner I could be away from and independent of my parents, the happier I would be."
(c) Beverly goes home (about 60 miles) about every two weeks. (Only her mother was at home at this time.)	(c) "Now we are building up a friendly relationship instead of the parent-child relationship."
(d) Does not disagree with any important religious, social, or political views of her family.	(d) Marcia goes home (120 miles) at the Christmas and spring vacations.
11. *Social relations with peers:* Beverly resists involvement in social affairs with age mates.	Marcia seeks affiliation with congenial organizations, though at college she has not had time during her first year.
Examples:	
(a) In high school: "I didn't chum around with a large group but only one girl . . . we were active in clubs, but still we didn't run around with anyone else."	(a) In high school: "I dated within this crowd, and although I did not always like them . . . I held on to them, because I thought if I didn't, I wouldn't have any social life at all; I came to like belonging to a group."
(b) Belongs to no college organizations. Looks upon them with condescension.	(b) Asks about joining an international club at the college.
(c) Has one close girl friend, but she does not attend the university.	(c) Has a boy friend in the city whom she expects to marry "if the war does not change our relationship."
(d) Goes out to dinner and the movies Friday evening with a girl friend. Does not go Saturday as it is a dating night and she does not want to be meeting couples all the time.	
(e) Has no boy friend.	

Explanatory Hypotheses to Account for Some of the Behavior of Beverly and Marcia

Our problem is to account for the different adjustments of these two girls: the apparently serene and happy adjustment of Marcia despite her extremely disabled condition, and the antagonisms, conflicts, suspicions and unhappiness of Beverly although her physical condition is much more favorable. It is our belief that a step toward understanding the different personalities of these girls may be made if we are able to define the different situations that have arisen through the interaction of their personalities and imposed social and physical conditions.

Overlapping Situations

We shall begin with the very general assumption that in American culture physically disabled persons, like Negroes and children, for example, have the position of an underprivileged minority. The data on attitudes toward the physically handicapped in the present chapter, and on employment in Chapter VII, can leave no doubt that behavioral incapacities and social rejection place these people in a subordinate position where many goals are inaccessible. However, it is obvious that the separation is far from complete. The disabled are not a caste; a more or less extensive range of activities is open to both the physically normal and the physically defective on equal terms, and it is possible for an individual to pass from one group to the other under some circumstances. In this respect, then, physically handicapped persons are in an overlapping situation like that of adolescents discussed in the preceding chapter. The operation of the structural and dynamic aspects of an overlapping situation is the same whether applied to adolescents or to disabled persons. We shall describe the situation of Beverly and Marcia in terms of the following variables: extent of common parts, nature of barriers, valence, potency, and congruence.[10]

Beverly	*Marcia*
1. *Extent of commonality of "cripple" and "normal" overlapping situations: i.e., size of region CN:*	
Relatively larger scope of behavior possibilities common with normals.	Relatively smaller scope of behavior possibilities common with normals.

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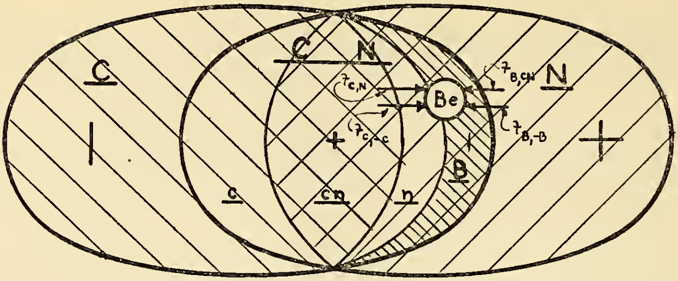
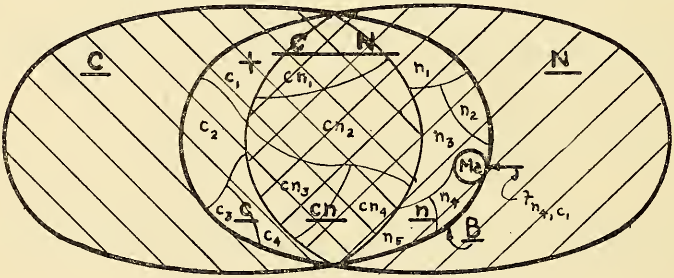
[10] The situations of Beverly and Marcia are represented in the figures on the following page:



The Psychological Situation of Beverly

C = Situation of crippled person (negative valence)
N = Situation of normal person (positive valence)
CN = Overlapping situation common to both crippled and normal person (low positive valence)
B = Barrier region (negative valence)
c = subregion of CN where crippled person's situation is identical with normal person's situation
n = subregion of CN where normal person's situation is identical with crippled person's situation
cn = subregion of CN where the situations of the crippled person and the normal person are interfering or antagonistic
$f_{C,N}$ = force in C toward N
$f_{C,-C}$ = force in C away from C
$f_{B,CN}$ = force in B toward CN
$f_{B,-B}$ = force in B away from B
Be = Beverly



The Psychological Situation of Marcia

C = Situation of crippled person (neutral valence)
N = Situation of normal person (neutral valence)
CN = Overlapping situation common to both crippled and normal person (positive valence)
B = Barrier
c = subregion of CN where crippled person's situation is identical with normal person's situation
n = subregion of CN where normal person's situation is identical with crippled person's situation
cn = subregion of CN where the situations of the crippled person and the normal person are interfering or antagonistic
$\left.\begin{matrix} c_1 \dots c_4 \\ cn_1 \dots cn_4 \\ n_1 \dots n_5 \end{matrix}\right\}$ = subregions of CN
f_{n_4,c_1} = force in n_4 toward c_1
Ma = Marcia

Evidence:	
Limited physical disability, wide range of activities, including even such activities as bicycle riding and tennis.	Extensive physical disability and restricted range of activities.
2. *Nature of barrier between CN and N:*	
Relatively indefinite barrier between accessible and inaccessible activities; social component of barrier very important.	Relatively definite barrier between accessible and inaccessible activities; barrier largely physical.
Evidence:	
(a) There are many activities in which Beverly can engage "after a fashion," e.g., dancing, hiking. Her admission to these depends on the attitudes of others and these vary greatly.	(a) Any activity with a greater locomotor component than that of slowly changing the location, of carrying on manual, verbal or intellectual activities is clearly inaccessible.
(b) Her family and community have gone very far in admitting her (even forcing her) to participation. Others do not do this, and she is therefore never certain what to expect.	(b) Her school experiences of attending a special school and being specially transported in taxis and buses emphasized the physical and social barrier separating her from the life of normal people.
(c) Her physical condition is not obvious to others under many conditions of sitting and standing; she is easily mistaken for a normal person in certain situations.	(c) Her disability is obvious to others under practically all conditions; there is little possibility that she will ever be taken for normal.
3. *Valence:*	
High positive valence of inaccessible "normal" activities, low positive valence of accessible activities common to normal and crippled persons; high negative valence of accessible "crippled" activities; negative valence of barrier.	Neutral valence of inaccessible "normal" activities, high valence of accessible activities common to normal and crippled persons, neutral valence of accessible "crippled" activities.

Evidence: Her expressed goals and preoccupations are for behavior of uncertain accessibility, e.g., sports events, marriage, offspring, membership in social clubs. She shows little interest in accessible intellectual and social activities; she deprecates and avoids identification with cripples and is antagonistic to normals who may reject her. Her great desire is to be normal in every respect.	Her expressed goals are for behavior that is accessible; for some of them her disabilities may even be advantageous, namely, amelioration of the condition of the handicapped, promotion of various social and political reforms. Marriage to her boy friend, who is a mechanic and hopes to become an engineer, is highly possible. Behavior related to her crippled condition, e.g., using crutches, receiving rehabilitation aid, appears neither strongly negative nor positive to her.
4. *Potency:* Relatively high potency of "normal" and cripple situations, and low potency of accessible activities.	Relatively low potency of the "normal" and cripple situations, and high potency of accessible activities.
Evidence: (a) Her family and community, by taking special precautions to admit her to normal activities, have emphasized their importance, and deprecated her crippled condition.	(a) Her segregated school experience and her friendship with a blind man have emphasized the importance of accessible goals.
(b) Her complete acceptance of the standards of her mobile but insecure family have magnified the importance of upper middle class behavior for which normal physique is highly desirable if not necessary. For example, for a good marriage and success in social affairs, dressing in the accepted fashions, dancing, and engaging in sports are particularly important in young adulthood.	(b) Her nonmobile lower middle class family have not magnified the importance of behavior leading to mobility. The radical social and political group to which she belonged deprecated the importance of behavior important for mobility and emphasized ideological behavior which is accessible to her.
5. *Congruity of behavior required by overlapping "normal" and "crippled" situations:* Marginality of overlapping situations relatively high, i.e., large amount of interference and conflict between the behaviors deriving from the overlapping situations.	Marginality of overlapping situations relatively low, i.e., small amount of interference and conflict between the behaviors deriving from the overlapping situations.

Evidence:

Many "normal" activities, if modified in accordance with Beverly's "cripple" requirements, are available to her, e.g., hiking, bicycle riding, tennis, dancing.	The only "normal" activities open to Marcia are modified in only minor degrees by her "cripple" situation, e.g., talking, thinking, manual activities.

Degree of Egocentricity

In addition to differences in marginal status, we wish to suggest a second factor of importance for the adjustment of these girls, namely, the degree of egocentricity of their life situations. By this we mean the extent to which the individual's behavior (perception, ambition, emotion, etc.) is determined by his own needs unmodified by a realization that the behavior of other persons and things is determined by separate, independent determiners. The infant is the prototype of the egocentric person. Indeed, the world of the infant *is truly* egocentric; his needs dominate the behavior of those around him. The mother is more sensitive to her child's needs than to her own; she is in effect a detached motor system for the child. The child inevitably accepts the world as devoted to him, as indeed it is in the beginning. He sees the world as singular, with himself the major determinant. It is a major adjustment for the child to accept the fact that the world is plural, that other persons and things operate in their own contexts which are only indirectly related to his behavior, and particularly, poorly related to his personal motives.

The nonegocentric person, on the other hand, is one who is not only aware of the independent behavior determiners of others, but who modifies his own behavior accordingly and to some degree accepts the motives of other persons and groups as his own. The world of the egocentric person is almost always smaller than the world of the nonegocentric person.

In respect to egocentricity our assumptions about Beverly and Marcia are as follows:

	Beverly	*Marcia*
Egocentricity:	Relatively high. Within Beverly's life situation are many highly personal goals. While she is intellectually aware of many larger social facts and problems, they have little effect upon her behavior.	Relatively low. In Marcia's situation, social goals have a relatively high valence. Her behavior is determined by group goals.

Evidence:

(a) Her writings and her conversation are devoted exclusively to her personal experiences and aspirations.	(a) From her writings and conversation with her, it is difficult to get information about her personal aspirations without direct questioning. Her spontaneous concern is always with large social problems, and her expressed aspirations are for the welfare of handicapped persons and the "United States of the World."
(b) Her expressed goals are all concerned with herself or her family. Even when asked directly, "If you could remodel the world to your heart's desire, how would you have it and what role would you play in such a world?" she does not leave the realm of personal affairs. She says, "My one great desire would be to be normal in every respect . . . all I want is to be happy."	

EXPLANATION OF THE BEHAVIOR OF BEVERLY AND MARCIA IN TERMS OF THESE HYPOTHESES

Attitudes toward Crippled Persons and Being Classed as a Cripple

Beverly displays inconsistent attitudes toward cripples. When formally asked to evaluate cripples on a series of rating scales she rates them rather favorably, much more favorably than Marcia. On the other hand, when conversing informally she frequently expresses very unfavorable attitudes toward cripples. Such inconsistent behavior is understandable, indeed necessary, and is determined by overlapping, antagonistic situations whose relative potencies vary from time to time. When conversing informally with a normal person, the pressures for normality are strong and the potency of the normal determiners becomes relatively great. Beverly then tries to behave in a way that will make her a normal person. At best, however, her position is never that of a person secure in her normality; it is always that of one whose normality is on trial. As with any mobile person who is on the margin between an underprivileged and a privileged group, one way to accentuate her normal status is to voice opinions depreciating the inferior group to which she might be suspected of belonging. Such behavior has been noted in other marginal groups, such as light-skinned Negroes and second generation immigrants.

On the other hand, when filling out a formal questionnaire for a person studying cripples, to which she signs her name, it is clear that she has been forced into the social category of the crippled. Here she has to behave as a cripple. In rating cripples she is rating herself and she can raise her self-esteem by rating rather favorably the group into which she has been forced.

According to our assumption Marcia's situation is not marginal in respect to this behavior. She is clearly crippled, and no amount of appropriate verbalization can cause her to be accepted as normal. However, she does not rate cripples favorably as a boost to her self-esteem as Beverly does when forced to acknowledge her crippled status. As a matter of fact, Marcia rates cripples unfavorably. Here, we believe, the differences in egocentrism operate. Marcia, we assume, is much less egocentric than Beverly; her behavior is determined by a much wider range of motivating factors; her goals are more often group goals than personal ones. While Marcia identifies herself with cripples even to the point of planning to devote her vocational activities to their welfare, crippling as such is unimportant to her. Character, personality, cooperation, intellectual honesty, a United States of the World are the important things. She is full of "causes" she wishes to promote; her devotion to cripples is a step to these larger ends. Crippling in her eyes has a bad effect on people becaue of the way it is handled educationally and vocationally. She has escaped these effects by good luck. She sees it, rather unclearly, as part of a larger educational and social problem about which something can be done. If these are accomplished, the unfortunate effects of crippling will cease.

While Beverly has attempted and failed to escape the social-psychological prison of the crippled by becoming normal, Marcia has succeeded in this to a large extent by reducing this very personal aspect of her life situation to a detail of a larger and vastly more important problem. Marcia does not need to defend cripples in order to defend herself; her connection with this group is relatively unimportant to her.

Although there is no clear evidence of its strength, another factor of some importance may be that Marcia by becoming a leader (or aspiring to become a leader) of this underprivileged group thereby identifies herself with the superior normal group. She already has contacts with school boards and commissions, and meets them on an equal status on behalf of the underprivileged persons whom she represents.

Undoubtedly, the essential condition determining the different attitudes of Beverly and Marcia toward cripples is that for Beverly her own crippling is a barrier to her major goal of normality, while for Marcia her crippled condition does not stand as an obstacle to her major goals. These same factors account for Beverly's resistance to wearing a brace and a special shoe, to standing to give oral reports, to attending segregated schools, to receiving aid from the rehabilitation worker. All of these behaviors have the effect of avoiding her crippled status in some degree and approximating "normal" behavior.

Self-protective Behavior and Social Relation with Peers

Beverly makes straightforward, superficial efforts to avoid the inevitable frustration of her attempts to gain a normal status; she does this by consciously "not expecting" any results of her efforts in this direction. These are obviously reactions to her traumatic experiences in the barrier region through which she continually tries to move. Less obvious to her, and more compulsive, is her secretiveness in social contacts, and her derogation of social groups to which she does not belong, e.g., sororities. This behavior usually takes the form of an encystment or withdrawal from particular behaviors; hardly ever does it take the form of a rejection of normality, or a seeking of refuge in her crippled status. Apparently, the forces toward normal status are very strong, keeping her continually in the dangerous social barrier region where she is continually embarrassed and rejected. To shield herself against such traumas she resorts to these temporary self-protective expedients.

Marcia exhibits no such behavior, and from what we can infer about her situation, there is no reason that she should. She is progressing toward accessible goals and not experiencing frustration through social rejection or behavioral incapacity. Similar inhibition and encystment is observable in others in marginal social situations; for example, there is the "splendid isolation" of upper class families who are forced downward because of financial troubles.

Attitudes toward Receiving Special Considerations and Sympathy

Beverly's antagonism toward receiving special consideration and sympathy from others is easily understandable in the light of her basic motivation to achieve acceptance by normals. Such behavior on the part of members of a privileged group is clear evidence of their superior status and of the recipient's inferior status. By rejecting such behaviors in others, Beverly attempts to defeat what she interprets as social pressure to exclude her. Her rejection of such subordinating behavior is extreme, and on no occasion did she give evidence of insight into the motivation of this behavior.

Marcia, on the other hand, is not in a subordinate position; she is not being rejected by a group to which she desires to belong, and hence she does not experience special privileges and sympathy from others as subordinating. Similar rejection of bounties by many underprivileged groups has been frequently pointed out.

Suspicion of Others' Motives

Beverly's suspicion of others' motives can be accounted for in terms of these same factors. Any action that on its surface is a "good deed" may derive from one of a number of motives: a person who does a good deed to another may be indicating obeisance, respect, desire to gain attention, affection, sympathy, pity, subordination. To a person of Beverly's status, who cannot accept behavior on the part of others that thrusts her back to the status she seeks to avoid, continued analysis of others' motives is necessary because she must reject some of this behavior. Thus she sees her invitation to the senior ball as a possible mark of sympathy which she must avoid.

Marcia, who is dedicated to making the world safe for intellectual honesty and cooperation, can accept personal benefactions because they do not endanger the things that are important to her.

Interest in Sports

In our culture, participation in sports is one of the most clear-cut evidences of physical normality, and an intense interest in these activities is an indication of social normality as well. Beverly's participation up to the very limit of her capacities, her emphasis upon past achievements, and her present intense spectator interest in sports are understandable in the light of her dominant drive to achieve acceptance as normal.

Lawfulness and the Individual Case

The cases of Beverly and Marcia are, of course, unique. They are not presented as exhibits of characteristic behavior of persons with these sorts of disabilities. Rather they are given to show how it is necessary to get behind the physical condition to the psychological situation. This is inferred partly from present motor and intellectual capacities, partly from the present social situation, partly from the past experiences of the individual, and partly from certain aspects of present behavior. It is probable that one would rarely find two other cases of similar physique with a similar balancing of situational and personality factors to produce the same psychological situations and the same behavior. On the other hand, different physical conditions and personality might easily enter into the production of the same type of psychological situation, and hence of behavior. If this should be the case, one would not expect to find high correlations between physique and behavior in massed data. However, this would not mean that lawfulness did not exist. It would only mean that one could not predict psychological phenomena from physical data and constructs.

We have proposed some psychological constructs in terms of which predictions may be possible. We suggest that when a person is in a marginal position between an underprivileged and a privileged social position, conflict and "maladjustment" will result (which may not be undesirable in all cases). This is a psychological concept to be investigated further for all kinds and degrees of physical disability. If true, it leads to the conclusion that disabilities and experiences that place the individual in marginal situations are in many respects less desirable than those that place an individual in restricted but unambiguous situations. We gain the idea from these cases, too, that the relative potency of personal and of social goals can be a factor of great importance. If these hypotheses should be verified by other data, they could mean that guidance efforts should be directed toward avoiding marginal social situations for the physically deviant, and toward reducing egocentrism.

Right here is the basis of one of the serious practical problems met in providing for disabled persons. On the one hand, marginality can often be overcome by providing segregated schools and workshops, but on the other hand, these easily become narrow and tend toward egocentricity. To create educational and vocational opportunities that avoid egocentricity without creating marginality, or avoid marginality without creating egocentricity appears to be a difficult problem, but not an insoluble one. Practical solutions to this problem are discussed in subsequent chapters.

RESEARCH SUMMARY IV

Social Behavior and Personality Correlates of Orthopedic Disability

Author: *Bradway* (11)

Problem and subjects: Description of a pair of identical female twins, 5 years old, one of whom had cerebral palsy due to birth injury.

Method: Observations and reports of informants.

Findings and conclusions: The spastic twin had the motor development of a 6-months-old infant; could use only 4 words with great difficulty; intelligence could not be tested but she appeared more alert than her twin. In these respects the physically normal twin was average. With respect to personality, "Observers agree the [spastic's] personality is more pleasing than her sister's, and that her emotional reactions seem entirely normal. She is very cooperative and displays sustained effort to the point of fatigue. Her sister reveals an impish, somewhat mischievous disposition which is reflected in negativism and relative lack of cooperation. Report of the home environment indicates that [the spastic twin] receives more attention and encouragement than her sister. She has responded favorably to this attention and has adjusted well socially, with some social compensation for physical inferiority. The physically normal twin, on the other hand, reveals inferiority reactions which are not warranted by her general ability and seems to draw attention to herself by an attitude of contrariness."

Author: *Allen and Pearson* (3)

Problem and subjects: Case studies of 12 hospitalized children, aged 4–15 years, with severe physical disabilities (orthopedic, cardiac, blind, harelip).

Method: Case histories from observations and informants.

Findings and conclusions: In 7 cases, severe behavior difficulties of the following sorts are reported: infantilism, jealousy, attention seeking, resistance to authority, fearfulness, truancy, stealing, temper tantrums. The high incidence of behavior difficulties and great variety of behavior symptoms are of chief significance.

Author: *Kanner and Lachman* (47)

Problem and subjects: Case studies of 8 children, 6–12 years old, with behavior difficulties associated with somatic disease.

Method: Case histories from observations and informants.

Findings and conclusions: In 6 cases, the physical condition is interpreted as a reaction to an unfavorable family situation, i.e., as a psychosomatic reaction; in 1 case, there is probably a direct physiological connection between eyestrain and headache, eating difficulties and enuresis. In the somatopsychological case, the child exhibited tantrums, disobedience, and tics when parents failed to accept asthma symptoms as of physical origin, as they were later proved to be.

Author: *Winkler* (104)

Problem and subjects: Comparison of 100 physically disabled children, 7–14 years old, with 100 physically normal children. Disabilities: scoliosis, hemiplegia, poliomyelitis, bone tuberculosis, cerebral palsy.

Method: Objective tests.

Findings and conclusions: 1. The phantasy of disabled children as indicated by interpretations of pictures is less colorful, less empathic, and less developed than that of physically normal children. 2. The ability of crippled children to observe differences in pictures is inferior at the younger ages and superior at the older ages. 3. In the use of abstract verbal concepts, crippled children are superior to normal children. 4. In light, fatiguing, or monotonous work, children with different disabilities exhibit characteristically different work curves: scoliosis, quick fatigue; hemiplegia, constant slow work; poliomyelitis, marked individual differences; cerebral palsy, unsteady work. 5. The chief personality difference between crippled and normal children is in connection with the drive for self-assertion. Crippled children show two reactions: (a) stubbornness, aggressiveness, and self-conceit; (b) inferiority, apathy, and withdrawal.

Author: *Jenkins* (45)

Problem and subjects: Description of a pair of identical female twins, 10 years old, one of whom had cerebral palsy due to birth injury.

Method: Observations, tests, and reports of informants.

Findings and conclusions: *Physical status.* The disabled twin exhibited choreoathetoid movements, was weaker, had poorer muscle tone, and a poorer posture than her sister; she was unable to compete with her sister in running and active physical play. When they fought, the disabled twin lost.

Mental and scholastic status	*Disabled*	*Nondisabled*
I.Q. (Stanford-Binet, 9 years)	64	79
I.Q. (Stanford-Binet, 10 years)	72	81
Performance scale	82	76
Reading (Stanford Achievement)	2.9	3.2
Arithmetic (Stanford Achievement)	3.0	3.9
Grade in school	high 2nd	low 5th

Personality. While both were quiet, the nondisabled twin was distinctly more outgoing, active, and responsive than the disabled twin who was shy, quiet, reserved, and reticent. According to her teacher, the disabled twin was more responsive to praise than the average child. Her low scholastic level is said to be due to her reticence rather than to intellectual factors. The testing time on the Stanford-Binet was twice as long as for her sister. "It required considerable encouragement and a persistent use of corkscrew tactics to get an adequate rating."

Social psychological situation. "The disabled twin has continually before her a rival who differs from herself in no striking way except to her own disadvantage; she has no individuality except in her deficiencies. Certainly such a situation would seem ideal for developing sibling rivalry which must be destructive so far as the inferior twin is concerned. . . . Both children agree that the mother favors the disabled twin. It would seem that the differences in personality might be explained in terms of their relation to each other. The disabled twin's unfavorable comparison . . . has handicapped her by making her discouraged, over-reticent, and unresponsive.

Author: *Hibbs* (41)

Problem and subjects: The adjustment to institutional life of disabled children with behavior disturbances. N = 14.

Method: Observations of behavior.

Findings and conclusions: The inclusion of seriously crippled children and high grade mental defectives in the same small institution has many advantages for the crippled children. The mentally defective are patient with the cripples' slowness and take great pleasure in helping them. This gives the physically handicapped child all the advantages essential to normal personality development without having to compete with those whom he can never hope to equal. Under these conditions 11 of the 14 children improved in personality adjustment.

Author: *Radl* (81)

Problem and subjects: Comparison of 30 crippled and 30 normal children, 10–14 years old.

Method: Objective tests.

Findings and conclusions: Asocial behavior is frequent in crippled children.

Author: *Copellman* (20)

Problem and subjects: The behavior problems of 100 children hospitalized for poliomyelitis; age 1½–15 years.

Method: Social workers' records.

Findings and conclusions: 38 children presented problems severe enough to cause parents to seek help. Young children tend to become withdrawn and bewildered; older children to become aggressive. Severity of reaction independent of severity of disease. Crying and irritability in response to frustration were the most common symptoms.

Author: *Von Baeyer* (4)

Problem and subjects: 20 crippled children.

Method: Case histories.

Findings and conclusions: Twofold reaction of cripples: 1) defensive withdrawal, negativism; 2) compensatory behavior: feelings of grandeur, excessive activity.

Author: *Lord* (55)

Problem and subjects: Summary of experience gained from examination and follow-up of 300 cases of cerebral palsy. Primarily concerned with appraisal of educational potentialities and with estimation of motor improvement.

Method: Case records of observations and reports of informants.

Findings and conclusions: No basis was found for belief that emotional instability is inherent in the damaged brain of the cerebral palsied child. Among children with average or better than average intelligence there is a fair proportion with good adjustment, but these are usually those whose disabilities are mild. An important factor determining degree of adjustment is the extent of the disparity between goals and ability to achieve them.

Author: *Gesell* (37)

Problem and subjects: Description of a male, cerebral palsy case, examined at intervals from 4 to 14 years of age.

Method: Controlled observations and tests.

Findings and conclusions:

Developmental level	54 months C.A.
Height, weight, dentition	64 months
Motor control (average of swallowing, head posture, body posture, body control, locomotion, grasping, reaching, holding)	6 months
Personal-social (average of emotional control, affection, sociability, sense of humor, social insight, play interest, story interest)	48–56 months

In spite of extreme motor discoordination, personality was relatively well integrated, with well sustained and discriminating emotional attitudes toward social environment. He advanced in his play interests and in his attitudes toward children and adults, showed preferences for boy companions of own age, and gave signs of pre-adolescent bashfulness.

Author: *Healy and Bronner* (40)

Problem and subjects: Physical defects in 105 delinquent and 105 nondelinquent siblings of modal age 12–14 years.

Method: Frequency of physical abnormalities in each group.

Findings and conclusions: The delinquents exhibited 129 cases, and the nondelinquents 78 cases, of the following physical deviations: underweight, overweight, premature sex development, retarded sex development, defective vision, strabismus, otitis media, defective hearing, diseased tonsils, nasal obstruction, badly carious teeth, endocrine disorder, phemosis, very poor posture, deformities. In all categories except otitis media and defective hearing, frequency of occurrence was greater in the delinquent group.

Author: *Burt* (14)

Problem and subjects: Physical defects in 197 delinquent and 197 nondelinquent children.

Method: Frequency of occurrence in delinquent children and nondelinquent controls.

Findings and conclusions: Among the delinquents there were 187 cases and among the nondelinquents 141 cases of malnutrition, rickets, dental defects, anemia, catarrh, tonsils, adenoids, tuberculosis, defective vision, squint, defective hearing, or defective speech.

Author: *Rubenstein* (87)

Problem and subjects: Problems of 7 adolescent boys hospitalized for poliomyelitis.

Method: Free discussion in informal clubs.

Findings and conclusions: The sudden trauma of poliomyelitis reactivates whatever fears and anxieties are latent within the individual. Common anxieties of adolescent boys: 1) apprehension of one's ability to succeed with girls, 2) vocational adjustment.

Author: *Timme* (100), *Fitzsimmons* (31), *Schumacher* (92), *Blumenthal* (10), *Wallace* (102), *Frank and Cleland* (32), *More* (71), *Christie* (18)

Problem and subjects: Relation of delinquency and physical defect.

Method: Physical examination of delinquent children.

Findings and conclusions: Because of absence of adequate standards of physical normality and of control of socio-economic level of the groups compared, these studies are difficult to interpret, although a number of suggestive findings are reported.

Author: *Stafford* (96)

Problem and subjects: Determination of the emotional problems of 200 male college students taking corrective physical education in a large university.

Method: Free interview.

Findings and conclusions: 1. A large number of these students did not have a satisfactory knowledge and understanding of the mental as well as the physical aspects of their conditions and were fearful of possible consequences. 2. The emotions, desires, and drives of the handicapped individual are not different from those of the normal person. 3. Where the handicap necessitated long convalescence, repression of the activity drive was found in many cases. 4. These handicapped students want to be treated the same as a normal student; they seek conformity and group recognition. 5. They resent segregation. 6. Reactions to defect: attempted concealment of defect, withdrawal. 7. Defects of personal appearance give more worry than defects which are not seen readily; the atypical finds it difficult to secure social approval. 8. The handicapped person is more often inclined to be lonely, morose, self-conscious, sensitive, and suspicious of the opinion of others. 9. An underlying anxiety, originating in repeated failures, frequently becomes focused on minor ailments. 10. Casts and other visible corrective devices worn before early adolescence do not give many unpleasant experiences which can be recalled; such devices worn in adolescence were the subject of more unpleasant memories. 11. Trivial disabilities are often sources of intense conflicts. 12. Experiences with adults are recalled as much more pleasant than experiences with children of the crippled child's own age. 13. The physically atypical student resents sympathy but desires understanding.

Author: *Dresdner* (26)

Problem and subjects: 23 adult orthopedic cripples, members of cripples' self-help society.

Method: Questionnaire.

Findings and conclusions: Crippling even in early life does not necessarily produce a warped personality.

Author: *Meng* (69)

Problem and subjects: 30 adult orthopedic cripples.

Method: Questionnaires, interviews, and psychoanalysis.

Findings and conclusions: Crippling does not have to result in distorted personality even in cases of severe physical handicap, although family conditions frequently favor the development of neurotic behavior.

Author: *Galton* (35)

Problem and subjects: Similarity of 13 adult pairs of like-sexed twins, one of whom was physically defective from illness or accident.

Method: Anecdotal method; data collected by correspondence. Gives protocol of one case, and conclusions from the others.

Findings and conclusions: Protocol from father of one pair: "At birth, they were *exactly* alike except that one was born with a bad varicose affection, the effect of which has been to prevent any violent exercise, such as dancing, running, and as she has grown older, to make her more serious and thoughtful." Galton says: "We may, therefore, broadly conclude that the only circumstance within the range of those by which persons of similar conditions of life are affected, that is capable of producing a marked effect on the character of adults, is illness or some accident which causes physical inferiority. The effect of illness, as shown by these replies, is great and deserves further consideration. It appears that the constitution of youth is not so elastic as we are apt to think, but that an attack [of illness] leaves a permanent mark, easily to be measured by the present method of comparison."

Author: *Bender* (8)

Problem and subjects: Etiology of psychosis associated with somatic diseases that distort the body: *ostietis deformans,* 5 cases; *osteogenesis imperfecta,* 1; dwarfism, 2; Little's disease, 1; poliomyelitis, 1.

Method: Clinical psychiatric examination.

Findings and conclusions: In these cases of psychosis the delusional systems denied, explained, or substituted for obscure or slowly changing physical distortions. The author believes the clinical evidence is sufficient to justify the assertion that in these cases the somatopsychological effects of physical changes were essential factors in the etiology of the psychoses.

Author: *Randall, Ewalt, and Blair* (82)

Problem and subjects: Reactions of World War II amputation cases immediately following injury, and in base hospital; 76 battle injuries, 24 noncombat injuries.

Method: Social history from Red Cross files; Rorschach "blind" analysis; clinical psychiatric examination.

Findings and conclusions:

	Percentage of cases expressing specified reaction			
	Immediately		*In base hospital*	
General reaction	*Battle*	*Noncombat*	*Battle*	*Noncombat*
Shame	0	0	11	33
Self-pity	1	0	9	0
Lucky	42	0	7	0
Worry about family	16	13	0	0
Depression	30	61	13	21
Psychiatric	4	13	3	8
No emotional response	7	13	57	38
Total	100	100	100	100

Note the more favorable reaction of the battle cases in both phases; and the decrease in the feeling of "lucky" and the increase in shame and self-pity in the second phase.

Evidence of anxiety was found in 67% of all cases by Rorschach analysis and in 65% by psychiatric examination. *Evidence of sex maladjustment* was found by Rorschach analysis in 81% of all cases and by clinical interview in 30%. *Evidence of serious maladjustment* was revealed by Rorschach analysis in 60% of all cases, by clinical interview in 64%, by personality change in 62%, and by plan to change vocation in 50%. In spite of the evidence of anxiety and maladjustment the morale of these men appeared excellent and many patients reported they felt fine and had no worries, present or future. The authors suspect that this is a masking reaction. Factors in the hospital situation causing this were: 1) acceptance of the patient as an ordinary person; 2) social pressure by the men, disapproval of complaints, etc.

Author: *Wittkower* (as reported by Rees) (83)
Problem and subjects: Reactions of World War II amputation cases, 75% of whom were seen more than 6 months after loss of limb. N = 200.
Method: Clinical interviews extending more than 2 hours.
Findings and conclusions:

Types of emotional reaction at time of interview	*Percentage of cases*
Depression	15.0
Resentment	21.5
Anxiety	5.5
Defiance	21.5
Cheerfulness	24.0
Resignation	8.0
Indifference	3.0
Not reported	1.5
Total	100.0

Evidence of serious maladjustment: About 50% were judged to show psychological reaction patterns likely to interfere with satisfactory social adjustment.

CHAPTER IV

PSYCHOLOGY OF THE TUBERCULAR

Interest in the psychology of tuberculosis has centered about description of the behavior of tuberculous persons, determination of the sources of this behavior, and description of the social and vocational situation of tuberculous individuals after their disease has been arrested. A number of publications deal with psychosomatic problems in the etiology of the disease, but these are not covered in this review.

Several particular problems frequently recur throughout the literature. There is an old tradition that individuals with pulmonary tuberculosis are characteristically hopeful, cheerful, and optimistic to a degree entirely unwarranted by the seriousness of their physical condition. This has been considered so characteristic of the tubercular, especially in the fatal end-stages of the disease, that it has been designated *spes phthisica.* Almost equally venerable in tuberculosis folklore are the beliefs that the tubercular show an increase in sexual urge and an increase in intellectual acuity. An old controversy has continued to the present time over the sources of the characteristic behavior of tuberculous individuals. Those on one side hold the behavior of the tubercular to be due to a kind of intoxication from the products of the metabolism of the tubercle bacillus; the others hold that the behavior results from the peculiar psychological situation in which this disease places the patient. Somewhat less frequent is a controversy over the relation of tuberculosis to the psychoses and to physical constitution. An association between asthenic habitus, schizophrenia, and tuberculosis has frequently been asserted. Throughout all the literature of the psychology of the tubercular the therapeutic significance of the various factors is, naturally enough, given a prominent position.

Nature of Tuberculosis and Magnitude of the Problem

Tuberculosis is an infectious disease caused by the tubercle bacillus which attacks every tissue, although the lungs are most vulnerable. It appears probable that in civilized countries the bacillus is nearly ubiquitous, and that almost everyone is infected before adulthood, normally so lightly that a resistance is developed. There is some evidence that in areas of low incidence increasing numbers of children are growing to adulthood without contact with the tubercle bacillus. The occurrence of the disease in adolescence and adulthood depends upon the lowering of normally developed resistance by malnutrition, fatigue, other disease conditions, or upon massive infection. Cure of the disease is at present impossible. Cases can often be arrested and made quiescent by means of bed rest, diet, lung collapse, and other therapeutic measures. The disease is largely painless, although surgical treatment may introduce strenuous episodes. Treatment is always long—a matter of months or years; the achievement of quiescence is a very gradual process. Modern diagnosis whereby many early cases are discovered, and modern treatment by means of surgery have changed the course of the disease in many respects since the 1920's. For this reason the earlier literature will not be reviewed here. Extensive bibliographies of the earlier literature are to be found in Muhl (104),[11] and Ronce (127).

The chance of arresting the disease by the best modern methods varies with the extent of the disease when treatment is begun. In a survey of 6,900 adult patients discharged from 75 sanatoria, it was found that the percentage of patients surviving five years later was as follows: a) of those for whom treatment was begun while the disease was minor, 75% were living; b) of those in whom the disease was moderately advanced before treatment was begun, 60% were living; c) and of those in whom the disease was far advanced before treatment was begun, 33% were living (157). With less than optimal treatment, the chances of arresting pulmonary tuberculosis wane to nearly zero. The duration of the period of quiescence depends upon the life condition of the patient after discharge. In one study of discharged patients employed by a sanatorium, under medical supervision, 69% were living at the time of the survey while 55% of the patients who had been discharged to nonsupervised employment were living (9).

Tuberculosis is a disease of young adulthood. Of 63,488 deaths from pulmonary tuberculosis in the United States in 1935, the largest proportion, 12%, occurred in the age group 25–29 years (54). An analysis of 4,069 representative sanatorium cases showed that 13% were under 21 years of age, 33% under 26, 51% under 31, 63% under 36, and 80% under 46 years of age (23).

Surveys have shown that there are about nine active cases of tuberculosis in the population of the United States for each yearly death;

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[11] References for Chapter IV will be found on pp. 311–319.

on this basis there are estimated to be over 500,000 cases of active tuberculosis. In one study of men going through the Armed Forces Induction Station in Boston between 1940 and 1943, 0.9% were found to be tubercular (73). A similar figure was found for upper New York State (118). An analysis of 23,834 X-ray films taken in industrial establishments in California indicated that 1% of the employees had minimal, moderate, or advanced tuberculosis (135).

The incidence of tuberculosis varies greatly with social, racial, and geographic status. In 1930 the tuberculosis death rate for unskilled workers was 185 per 100,000, for skilled workers 72, and for professional men 26. In Akron, Ohio, the tuberculosis death rate for white residents was 31 per 100,000, in Cincinnati 62, and in San Antonio, Texas, 162. The tuberculosis death rate for Negroes in the United States is 3.5 to 4 times that of whites (54).

This brief clinical and demographic sketch of the tuberculosis problem indicates the great extent of the social-psychological problems involved. The more than 500,000 persons with active tuberculosis in this country are predominantly young adults at the ages when ambition and responsibilities are greatest; they have to renounce all activity for months or years at a time, and have to shoulder heavy financial and vocational costs. Often they are separated from their families and acquaintances for long periods of time and are placed in special institutions in face-to-face groups with strangers similarly diseased. The larger proportion of tubercular patients are relatively poorly educated, unskilled workers faced with the prospect of being unable to return to the type of work they know. The progress of the disease is usually slow, and the patients' experiences of well-being are not closely related to the actual seriousness of the disease. In the cases of patients in whom the disease is arrested, the transition to normal vocational and social life is slow and often never complete, requiring a lifetime of special living arrangements. In addition to these characteristics of the disease itself, tuberculosis has a definite meaning to the nontuberculous majority. A generation of education as to the infectiousness of tuberculosis has created a fearful public that rejects those who are justly or unjustly suspected of being sources of infection. In this way a heavy social burden is added to the physical affliction. There would appear to be a good foundation for the frequently expressed opinion of physicians that few diseases have more widespread psychological involvement than tuberculosis.

THE BEHAVIOR OF PERSONS WITH PULMONARY TUBERCULOSIS

The extent of agreement as to the behavior characteristics of tuberculous persons may be quickly indicated by listing some terms we have found used in describing their behavior: euphoric, depressed; increased sex urge, decreased sex urge; fearful, confident; intellectually alert, intellectually dull; anxious, unconcerned; extroverted, introverted; realistic acceptance of disease, rejection of disease; indifference to disease, malingering to continue treatment; self-centered, self-effacing; low vitality, drive; optimism, pessimism; guilt, hate; daydreaming, sensitive to outside stimuli; antisocial, social; high-strung, phlegmatic. Our task is to try to separate the wheat from the chaff in these conflicting reports.

For analysis the literature can conveniently be divided ino three categories: 1) studies presenting data in such a way that evaluation of the conclusions is possible; 2) reports based upon special collections of data which are not presented in sufficient detail to allow appraisal of the conclusions; 3) reports of the opinions of experts, not based upon any particular collection of data (these are usually the opinions of medical specialists on tuberculosis). Of the 62 reports covered in this review, 10 satisfy the requirements of scientific inquiry and reporting, 12 fall in the second category, and 40 are opinions and general impressions.

Scientific Research

Singeisen (145) has compared tuberculous and cardiac patients with each other and with physically normal persons with respect to Rorschach responses. The subjects were 50 chronic pulmonary tuberculosis cases and 40 chronic cardiac cases, 20–60 years of age, from the clinic of the University of Bern. The sexes were equally represented in each series, and in each the patients were from working and peasant populations. All were serious medical cases of more than a year's duration, most of them of several years'. No patient with noticeable psychotic behavior was included. Special attention was given to securing optimal rapport.

Singeisen's evaluation of his results for tuberculars in comparison with cardiacs and normals may be summarized as follows:

1. *Number of responses:* No differences.
2. *Reaction time:* No differences.
3. *Good form:* The percentage of good form responses is high by normal standards for both tuberculars and cardiacs.
4. *Movement:* Both tuberculars and cardiacs give few movement responses, but tuberculars give fewer than cardiacs.

5. *Color:* Frequency of color responses is high for tuberculars and low for cardiacs.
6. *Erlebnis typus* (movement-color relationship): Tuberculars fall more often in the extratensive type while cardiacs are predominantly in the introversive or neutral type.
7. *Number of whole responses:* No differences.
8. *Part-whole response relations:* Cardiacs have a surprisingly strong inclination for small broken detail; in this respect tuberculars do not differ markedly from normals.
9. *Light-dark* (shading factors): No differences between tuberculars and cardiacs, though both were low.
10. *Figure-ground:* Both groups are low in responses dealing with white spaces; tuberculars give more white responses than cardiacs.
11. *Animal responses:* No differences.
12. *Anatomical responses:* Very striking number of anatomical interpretations by both groups, but more by tuberculars.
13. *Original responses:* No differences.

Singeisen considers the most significant aspect of these results to be the extratensive *erlebnis typus* of tuberculars. The many color and few movement responses indicate strong emotionality, he says, and above all this emotionality is directed outward. The high frequency of color-form response indicates that the emotionality is labile and unstable, showing itself in impulsiveness and instability. The affect of tuberculars is much stronger than that of normals and especially than that of cardiacs. However, tuberculars have the capacity for lively rapport with the environment. The large number of color responses with good form indicates a neurotic trend and many complexes, but these are probably not severe as the more severe ones can be released outwardly. However a large amount of frustrated affect makes tuberculars discontented.

Singeisen believes the good form responses are evidence of a good intelligence backed by lots of vitality and activity. The white space responses suggest a tendency to be contrary and stubborn. The large number of anatomical responses show a preoccupation with bodily and especially pathological processes that is even higher than with hypochondriacal or anxiety cases. In evaluating this last finding it is necessary to remember that these people have been sick for years.

The significance of this study hinges upon the reliability and the validity of the Rorschach responses and interpretations. We cannot undertake this evaluation here. We have submitted the results to other competent Rorschach testers, and have received interpretations of the results very similar to those of Singeisen.

Seidenfeld (139) administered the Maller Personality Sketches to 50 sanatorium patients and to 50 graduate and undergraduate psychology students as a control group. The comparability of these two groups is indicated by the following data:

	No. of cases		*Mean*	*Mean*	*Mean*
	Males	*Females*	*education*	*I.Q. (Otis)*	*C.A.*
Psychology students	27	23	4.5 yrs. college	112.3	29.9
Patients	29	21	2.0 yrs. high school	106.7	30.3

Of the 100 items, 15 were answered differently by sufficient numbers of tuberculous and control subjects so that it is highly improbable that the differences are chance differences. The percentages of each group responding "yes" to each of the 15 items are as follows:

	Tubercular	*Control*
Are you often very unhappy and grouchy?	48	4
Are you very often unable to fall asleep because of some thought?	78	38
Do you feel annoyed when someone looks at you when you are writing?	48	14
Do you feel you are an unlucky person?	28	4
Are you often gloomy and unfriendly?	28	4
Do you often feel pain all over your body?	28	0
Do you often do things on the spur of the moment and then regret it?	60	28
Are you often unable to concentrate on your work?	38	12
Do you often feel blue?	50	24
Do you often feel tired even after you get up in the morning?	48	14
Do you often dream that some people died?	26	6
Are you very nervous?	54	28
Do you feel ashamed of some sickness or trouble?	18	2
Do you let your mind wander and forget what you are doing or saying?	52	30
Are you very slow in making up your mind?	50	26

According to Maller's standardization these differences are all in the direction of greater maladjustment for tuberculars; however, as we shall point out below, we do not think such an interpretation is justified for these subjects.

Several investigators have administered personality inventories to tuberculous patients and have scored and interpreted the tests in terms of standardizations based upon healthy individuals. We do not believe that this is a legitimate procedure. The difficulty may be illustrated by considering such items as the following from the Bernreuter Personality Inventory:

Item no.

59 Do you find it difficult to speak in public?
64 Do you feel a great deal of hesitancy over borrowing an article from an acquaintance?
80 Do you lack self-confidence?
98 Do you prefer a play to a dance?

The life situation of tuberculous persons gives the responses to such questions quite different meanings from the objectively identical responses of physically normal persons. Thus a *yes* response to item 59 by a healthy person may have symptomatic significance for personality; but for the tuberculous person in a sanatorium it is an indication of the physical-social reality in which he lives. This changed meaning of the responses of tuberculous patients applies to an unknown degree to many items. We shall call these, *items of different interpretive significance.*

The validity of personality schedules depends upon the comparability of the life situations of the tested persons with those of the standardization groups. Within what range the life situations may vary without invalidating the findings we do not know, but it is clear that the life situation of a tuberculous individual is radically different from that of most healthy persons. It is also clear that the behavior of the tubercular will differ from that of healthy persons and that these differences cannot be directly interpreted in terms of the personality differences found among healthy persons. Special standardizations for sanatorium patients are required. This does not mean, of course, that the differences in personality test scores of tubercular and normal groups are not real and do not indicate real behavior differences, but the question of what these differences signify in the two cases is uncertain. (For discussion of this question in connection with problems of the deaf, see pp. 171 ff., 180 ff.)

Three studies of introversion-extroversion have been reported. In two of these (109, 141) the tuberculous patients scored introversive more frequently than extroversive; in one (78) the mode of the distribution was in the neutrovert range. On one test (109) the more seriously ill patients scored relatively more extroverted than the less seriously ill cases; while on another (141) no differences related to seriousness of illness were found. A study (78) using the Jasper elation-depression tests found tuberculosis patients moderately elated. The investigation using the Bernreuter (144) found tuberculous patients introverted on the average, and also more neurotic, less self-sufficient, more submissive, less self-confident, and more sociable than normal subjects.

Several studies contain data upon the intelligence of tubercular patients. Neyman (109) administered the Army Alpha to 300 cases in a municipal sanatorium. The percentage distributions of grades of this group and of the Army standardization group were as follows:

Grade	*Sanatorium group*	*Army group*
A	9	5
B	14	10
C+	28	15
C	23	25
C—	14	20
D	7	15
D—	5	10
	100	100

Jones and Bogen (78) gave the 1917 revision of the Stanford-Binet Vocabulary Test to 200 sanatorium cases. The median of correct definitions for the males was 75, and for the females 81; the 16-year standard is 65. Schultz and Rush (142) gave the Pressey Senior Class Achievement Test to 88 male and 101 female patients in a public sanatorium and found that 73% of the tubercular males surpassed the median of a group of employed and unemployed healthy adults; for the females this proportion was 55%. On the Minnesota Clerical Aptitude Test the mean of the sanatorium males exceeded that of the standardization group of employed and unemployed adults, with a critical ratio of over 3.0; the females did not differ from the controls. Seidenfeld (138) gave the Otis Self-Administering Test of Mental Ability to 101 patients in a private sanatorium and found them to score slightly, but not significantly, higher than the Otis norms. There was no relation between severity of the disease and Otis score. Singeisen (145) on the basis of the Rorschach results rated his patients as of good average intelligence. Moore (99) administered the Pressey Senior Classification Test to 40 arrested and 40 relapsed cases from a public sanatorium and found that both groups scored higher on the average than an unselected group of adults; the patients were comparable with office workers, bank tellers, policemen, and retail salesmen.

The interpretation of these results is difficult, owing to inconclusive evidence as to selective factors in tuberculosis sanatoria. All the data cited above, except Seidenfeld's, were secured from patients in public sanatoria. In general their populations are drawn in disproportionately large numbers from the lower socio-economic groups. This might lead one to expect mean intelligence scores below the general average. On the other hand, the more intelligent from these social groups may apply for admission to sanatoria. In any case, it is clear that tuberculosis does not lead to intellectual regression even in severe cases; in fact the weight of the evidence is in the opposite direction.

Brack (15) made a histological study of the testes of 400 male and the ovaries of 275 female pulmonary tubercular cadavers. The total series was distributed by age at time of death as follows: below 16 years, 18%; 16–35, 74%; over 35, 8%. Brack reports that children who had died of tuberculosis showed hypoplasia of the gonads; adolescent tissues were late and imperfect in their development; and in adults there was a premature obliteration of the sperm and ova producing tissues. He considers these changes to be a direct result of pulmonary tuberculosis, although he states that similar conditions are observed in some other diseases, notably in cases of cancer of long duration, but less frequently.

Although Brack considers this evidence to be directly relevant to the question of the sex drive of tubercular patients, two questions arise. We know that psychological factors in sex activity are important, and that its relation to the gonadal hormone production in humans is imperfect. Further, it must be borne in mind that in all of Brack's cases tuberculosis was fatal. What may be the effect of less serious tuberculosis upon the gonads is not indicated.

Cox (29) investigated the frequency of tuberculosis among suicides. Of 207 cases during the ten year period 1921–30 in Brighton, England, two or about 1% were tuberculous. This is very close to the incidence of tuberculosis in the general population of England.

Studies Based upon Special Collections of Data, but Reporting Only Conclusions

Strecker, Braceland and Gordon (148) report the results of a series of clinical, psychiatric interviews with 75 patients with active tuberculosis. The patients were selected at random from several types of sanatoria in an effort to get a cross section of the sanatorium population. The patients were allowed to talk freely about their personal problems and later were questioned at length in an attempt to elicit information upon basic mood and sex drive before becoming tubercular, at the time of diagnosis, and at the time of the interview. Efforts were made to secure frank expressions of opinions and attitudes. The authors believe that they were successful in this in all but three cases. In addition to the interview data, sanatoria publications were scanned for personal documents and the diary of one patient was studied, but these data are not reported in any detail.

Patients reported wide variations in their reactions to the diagnosis of tuberculosis. In some cases the response was one of relief; one patient expressed this as follows: "I had been feeling very badly for a year. I was difficult and nasty to people. It was really a relief to be told I could give up and have things done for me. . . . I got the things I had always loved. I was sent to a beautiful place and I could see lovely mountain scenery from my window. . . . It was very pleasant, but beneath it all was a feeling of depression." Some patients took the diagnosis without strong emotion, as a fact to be coped with. Others experienced strong depression and several tried suicide.

At the time of interview the affective reactions of the 75 patients were classified as follows: *fatalistic,* with undercurrent of bitterness and feeling of frustration, 35 cases; *depressed,* 29; *marked mood swings,* 2; *euphoric,* 7. Because of the tradition that tubercular persons frequently exhibit euphoria these last 7 cases were studied in more detail. One turned out later not to have tuberculosis. One was dull and appeared to have an inadquate comprehension of his condition. One was taking his stay in the sanatorium as a vacation, since his employer was paying his expenses; this patient left when the payments ceased. One was a religious fanatic with complete faith in God's will. Two were definite manic-depressives in the manic phase. One was a boy of 17 who had lived in the sanatorium since the age of 10. The authors conclude, "There were no cases of euphoria that were not tainted. None of them could be regarded as being euphoric as a result of the presence of tuberculosis." The study of the patients' contributions to sanatoria publications also failed to reveal any consistent note of cheerfulness. The authors believe that the most persistent mood of the tubercular patient is one of apprehensive anxiety.

The patients were aware of the belief that there is increased sex desire with tuberculosis, and discussed the matter among themselves. However, of the 75 patients in this series only 4 (3 male, 1 female) reported experiencing an increased desire themselves. The largest number thought their desire was the same as before the onset of the disease, or somewhat lessened. Of the 4 who claimed to experience an increase, 2 males were hyperactive sexually before their illness and maintained a considerable degree of stimulation in the sanatorium by reading suggestive "art" magazines. One male was having marital difficulties and was lonely. One female said she realized she had not long to live and wanted to concentrate her pleasures while there was time; this patient was discharged three weeks later as a false diagnosis.

Muhl (104, 105) made a somewhat similar study of 30 tubercular females selected from a variety of sanatoria. Of these, 16 were married and 14 single. They ranged from 5 to 55 years of age. Altogether "about 2,000 hours of experimental work was done," consisting of direct and analytical interviewing. Only the conclusions were reported: Certain traits are present in all cases, namely, explosive affect, inertia, fatigability, oscillating mood, perseveration, depression, irritability, converted sex trends, apprehensiveness, restlessness, sensitivity, loss of interest, regressive trends, suggestibility, lachrimosity, abnormal respiratory behavior. Other traits were found in 29 of the 30 cases: memory impairment, ambition, dissociative trends, circumstantiality, visual disturbance, compulsions, day dreams, hindrance to self-expression, hypomanic features, postural difficulties, bashfulness, impairment of ethical sense. The presence of contradictory traits in these lists leads Muhl to the speculation that in tuberculous patients there is a mixed type of personality in which some of the ambivalent trends may be deeply hidden. This gives rise to a basic conflict that ties up great amounts of energy leaving little for emergencies either physical or mental.

Muhl finds the optimism of the tubercular to be "pretty much a myth"; it appears only as a compensation maneuver to hide a fundamental depression. She found definitely increased sexual urge in 12 subjects, a decreased urge in 4, and no change in 14.

In Research Summary V information about 10 less extensive reports is abstracted.

Opinions of Experts

In addition to the studies based upon specific data, the literature contains a large number of articles stating the opinions of medical experts. The opinions of 44 authors are tabulated in Table 3. These 44 persons do not include any of those considered in preceding sections. The literature covered in Table 3 does not constitute a complete survey of all the material available, but we believe the sampling is sufficient to give a fair view of the opinions held.

TABLE 3

Summary of Opinions of 44 Medical Experts *

Behavior characteristics of tuberculosis patients	*Number of experts mentioning*
Anxiety, fearfulness	16
Apathy, lassitude	2
Neurasthenia, insomnia, anorexia, fatigue	13
Suggestibility	7
Hypochondriasis	6
Self-centered behavior	13
Mental alertness	9
Mental dullness	1
Spes phthisica (in terminal stages)	8
Euphoria, hopefulness	6
Depression	9
Denies euphoria	3
Increased sex drive	8
Sex drive not increased	3
Infantile behavior	6
Irritability	6
Instability	5
Restlessness	3
Suppression of symptoms	3
Irresponsibility	2
Increased sensory acuity	2
Lack of self-confidence	2
Thinks other's condition worse	2
Imagination	2

* These opinions have been culled from the following references: 1, 3, 4, 5, 6, 10, 11, 12, 14, 20, 21, 30, 31, 32, 33, 37, 46, 55, 57, 69, 74, 76, 81, 82, 83, 84, 86, 97, 98, 102, 108, 112, 114, 121, 128, 129, 132, 133, 134, 137, 149, 151, 152, 158.

The table is obviously not to be regarded as a report of the balloting of medical experts upon all the characteristics mentioned. Not all of the authors expressed themselves upon all issues. The table gives, rather, the concensus of spontaneously expressed opinion when medical tuberculosis experts are confronted with the general question: "What in your opinion are the behavior characteristics of tuberculous patients?"

In the first place, it should be stated that 19 of these 44 authors specifically expressed the opinion that there is no unique tuberculous behavior. A few of these stated that the behavior of tuberculous individuals does not differ from that of healthy persons; others that tuberculous paients do not differ in their behavior from other chronically ill persons; some expressed the opinion that there are several types of reaction to tuberculosis depending upon the previous temperament of the person, upon the socio-economic position of the patient, or upon the course and seriousness of the disease. Ten of the experts believe the behavior changes with the course of the disease.

In assessing the value of these data the statement of Brown (20), after surveying this kind of literature, is pertinent: "Contradiction contradicts contradiction and the tuberculous patient is described as being anything between an insane criminal and a saint too ethereal for this mundane world." He suggests that this is because "Unfortunately so many of us engaged in treating pulmonary tuberculosis are so impressed with the mental vagaries of some of our patients that we are led to comment on them, and without sufficient data to draw general conclusions based almost entirely on the exceptional cases."

It does not seem, however, that these opinions of persons, many of whom have had daily contact with tuberculous persons for years, should be completely discounted. In this literature of the last twenty years we find a concentration of opinions in categories not in conformity with the earlier folklore of tuberculosis. Thus in this sampling of opinion the traditions of euphoria, hypersexuality, and mental alertness are mentioned less frequently than anxiety, neurasthenia, and egotism. There is, nonetheless, a distinct cleavage of opinion.

Summary

We find that data upon the behavior of tuberculous persons which approach acceptable standards of scientific inquiry and reporting are meager, but fairly consistent:

1. A great variety of behavior is exhibited by tuberculous persons; there is no unique tuberculous behavior.
2. There are indications that some kinds of behavior are more frequent than in healthy populations, although exactly comparable data are not available.
3. Anxiety, mild neuroticism, neurasthenia, and discontent are frequently found.
4. Euphoria is infrequently reported, and when it is, investigators question whether it is genuine or in the nature of a protective mechanism.
5. Data on sex drive are inadequate; what there are do not support the theory of increased sex drive.
6. The evidence upon intelligence gives no indication that tuberculosis has a regressive effect; the bulk of the data supports the tentative hypothesis that tuberculosis may be associated with a slightly increased level of intellectual functioning.

The opinions of medical experts are in general agreement with the scientific studies: anxiety, neurasthenia, mental alertness, and emotional depression are among the more frequently mentioned characteristics. The relatively high ranking given to self-centered behavior is not out of line with the studies, as it probably involves a combination of the hypochondriacal and discontented behavior mentioned by the investigators. However, the fairly frequent judgments of increased sex drive, *spes phthisica,* and euphoria do not accord with the more scientific findings. *Spes phthisica* is usually mentioned as a characteristic of the terminal stages of fatal cases, and this is a stage that has not been scientifically studied. While not found to be frequent, in some of the studies increased sex drive and euphoria are mentioned as occurring in tuberculars.

Reasons for occasional false generalizations by medical personnel on the basis of a few atypical cases are obvious enough. Furthermore, physicians on rounds often see patients under very special circumstances; the doctor is an important person for whom an "act" must be put on in some degree. If the physician does not take care to observe the patients aside from his professional contacts with them, or does not accurately discount the element of pretense, he may build up a distorted picture of the behavior of the tubercular. There is also the question of what standard of comparison is used. When a physician reports that tubercular patients are relatively hopeful, cheerful, or euphoric, for example, we would like to know what he is using as a standard. There are several possibilities; he may mean relative to healthy persons, relative to persons with other diseases, relative to the medical seriousness of the patient's condition. We have found no mention of the standard used in these reports. It is likely that without a clear definition of a standard, the latter two factors are important in the context of the physician's judgment. If this is true, a physician might well judge a tubercular patient to be euphoric in relation to the seriousness of his physical condition, or in relation to a cancer or cardiac patient, while still the patient might be mildly depressed in comparison with healthy persons. In addition, particular sanatoria sometimes select patients from special medical or social categories of patients; a sanatorium for mild or moderate cases from the upper socio-economic classes may present quite a different behavioral picture from a public sanatorium with many uneducated patients with advanced tuberculosis.

Not only is there a paucity of data in this field, but there is an almost complete absence of some kinds of data. Despite the well-known fact that numerous able writers have been tubercular, we find no personal documents describing experiences, as we do with the blind, the deaf, and the crippled. It is interesting to speculate as to the reasons for this. There are works of fiction dealing with the problems of tuberculosis and based upon firsthand experience, for instance, by O'Neill (111) and by Powys (122). The great novel by Thomas Mann, *The Magic Mountain,* is laid in a tuberculosis sanatorium. To what extent this work is basically an interpretation of the situation and behavior of the tubercular, and to what extent it is a convenient background for the consideration of more universal problems is not clear. Fiction may be used to illustrate scientific facts, but it can hardly be used as a source of scientific information. Biographical studies of historically important tuberculous persons are quite superficial (100, 107).

Sources of Behavior of the Tuberculous Individual

The causation of the behavior of the tubercular has been sought in several sources. These may be indicated by the following questions which have been raised: 1) Is there a constitutional type which exhibits both susceptibility to tuberculosis infection and characteristic behavior? 2) Are there psychological difficulties which lead to both lowered resistance with frequent tuberculosis infection and behavior symptoms? 3) Are central nervous tissues the site of foci of infection with consequent behavior manifestations? 4) Is there a general toxemia from the metabolism of the tubercle bacillus, or from the destruction of lung tissues, which affects the central nervous system and consequently behavior? 5) Does increased body temperature have an effect upon behavior? 6) Does the fact of having tuberculosis, and all this entails in the way of changed living conditions, create a psychological situation which causes tuberculous behavior?

The last problem mentioned is the one with which we are mainly concerned in this review, but to round out the picture brief mention will first be made of the other issues. Table 4 is a tabulation of the frequency with which 36 medical experts assign the behavior of the tubercular to different causes.

Constitutional Type

This problem has been investigated by seeking correlations between physical type and tuberculosis susceptibility on the one hand, and between physical type and behavior on the other. The finding of such correlations would place the source of both tuberculosis susceptibility and behavior

TABLE 4

Consensus of Opinion of 36 Medical Experts as to the Causation of Behavior in Tuberculous Persons *

Source of behavior	*Number of experts mentioning*
Toxemia	5
Psychological situation of tuberculous individual	8
Pre-morbid personality	2
Combination of toxic and psychological factors	7
Combination of psychological and pre-morbid constitutional factors	9
Pre-morbid constitution and toxins	1
Combination of psychological, constitutional, and toxic factors	2
Foci of infection in nervous tissue, toxemia, and psychological factors	1
Damage to nervous tissues, psychological factors, and pre-morbid constitutional factors	1

* Sources: References 1, 5, 11, 12, 14, 25, 31, 40, 45, 55, 57, 69, 74, 75, 81, 82, 83, 86, 91, 97, 102, 107, 112, 114, 121, 127, 129, 132, 133, 134, 137, 145, 147, 149, 158, 162.

characteristics in some unknown constitutional factor. The state of our knowledge of the relationship between physical type and behavior and physical type and tuberculosis is controversial. The literature on the constitutional basis of tuberculosis has been reviewed by Long (91). Despite the tradition that there is a characteristic tuberculous physique, recent studies give no basis for this belief. Jaensch (75) has claimed to find an association between perceptual type and behavior on the one hand, and perceptual type and tuberculosis on the other; however, his findings have not been checked by others and until they are they can hardly be accepted as more than a hypothesis for further investigation.

Psychosomatic Factors in the Etiology of Tuberculosis

The publications dealing with this subject have not been surveyed for this review. The reader is referred to Dunbar (39) for an introduction to the literature, which is largely case material and not extensive. It seems beyond question, however, that certain personality problems in some persons bring about functional physiological changes that predispose toward tubercular infection.

Central Nervous Tissue Lesions

Infection of neural tissues by the tubercle bacillus does occur, but it is rare in pulmonary tuberculosis (54).

Effects of Toxins

The effects of the toxins of tuberculosis upon the behavior of the patient have been the subject of long controversy. In minimal and moderate cases the evidence is all indirect as there is no test for amount of toxin present. In the absence of a direct measure of toxin to correlate with behavior, various arguments have been advanced to the effect that toxins are the source of the behavior characteristic of the tubercular: 1) Patients exhibit behavior symptoms typical of tuberculosis before the diagnosis is made and when they have not suspected they were tubercular; such symptoms cannot be due to psychological effects and must therefore be due to toxins (129). 2) There is a relationship between severity of the disease and severity of the behavior symptoms (106). 3) Children with tuberculosis of the bones and glands produce continuous toxins and show more characteristic behavior than those with pulmonary tuberculosis where toxin production is intermittent (86). 4) Behavior symptoms remit after artificial pneumothorax and the squeezing out of large quantities of pus and other toxic matter (112). Others have presented arguments as to the nontoxic sources of the behavior of the tubercular: 1) X-rays of older persons frequently reveal scars of serious, but now healed, tuberculosis; the ignorance of having tuberculosis has left such persons psychologically unaffected (158). 2) There is no relation between the severity of tuberculosis and the severity of behavior symptoms (55). These arguments are made without supporting evidence, or with so few data that little credence can be given to them.

In the case of advanced tuberculosis, medical opinion is quite generally agreed that toxemia is the basis of terminal delirium.

Effects of Fever

No systematic discussion of possible effects of fever has come to our attention, but the question has been raised as worthy of investigation.

Somatopsychological Problems in Tuberculosis

This brings us to our main concern, namely: What is the effect upon behavior of being in the psycho-physical and psycho-social situation of having tuberculosis. We have found no direct experimental evidence upon this question, although there is much general discussion and incidental information bearing upon it in the literature.

Somatopsychological Problems in Diagnosis and Treatment

There is considerable evidence that the social psychology of tubercular persons is important medically. One source of this evidence lies in the failure to get cases in the early stages of the disease. Burhoe (23) found that in the United States in 1934, 16% of all sanatorium admissions were in an incipient stage, 30% were moderately advanced, and 54% were far advanced. Similar figures were reported for 1938 by the American Medical Association (164). All experts agree that it is this failure to get the tuberculosis cases in an early state which makes the prognosis so poor. The hope of reducing tuberculosis further depends upon prevention which in turn depends upon early treatment in segregated groups until a case becomes arrested.

If cases are to be treated early, large scale testing of the population is required. Harmon (56) reports the result of such an effort in Detroit; 187,543 individuals were visited by public health nurses and urged to accept tuberculosis examination. The invitation was accepted by 17% of the white interviewees and 40% of the Negroes. This would seem to indicate the need for a different social approach. One procedure in the past has been to publicize the infectiousness and the seriousness of tuberculosis. This, however, has given rise to a widespread tuberculosis phobia leading to frequent exclusion of arrested cases from safe vocational and social activities. This kind of procedure defeats its own end because such ostracism is undoubtedly one of the important causes of relapse; because of it there is a tendency to keep tuberculosis secret, thus increasing sources of infection. Here then is an important, practical social-psychological problem which can feasibly be approached experimentally.

After pulmonary tuberculosis is diagnosed, there remains the sometimes difficult problem of convincing the victim of the necessity of treatment. Williams and Hill (159) studied the reactions of 1,499 patients to the diagnosis of tuberculosis and reported that 9% did not believe the diagnosis. Morse (103) investigated 150 cases diagnosed as tuberculous who refused treatment. He found that at the time of diagnosis the prognosis was good for 80% and fair for 20%, i.e., most of them were in the early stages of the disease. When checked upon later, 6.6% were well or improved, 7.3% were in quiescent state, 13.3% were worse, and 72.6% were in hopeless condition or were dead. The frequency with which various reasons for refusing treatment were given by these tubercular individuals was as follows: felt well, 64%; going to others for treatment, 38%; sex maladjustment, 22%; family doctor did not encourage, 20%; long sanatorium waiting list, 14%; fear of sanatorium, 10%; misunderstood, 10%; did not believe diagnosis, 10%; sanatorium overcrowded, 8%; loss of income, 8%; liquor, 6%; too much free care, 6%; religious prejudice, 5%. In as many cases as possible the individual was later asked, when the condition became acute, what he thought could have influenced him to submit to treatment. The following replies were received, in order from most to least frequent: legal force, more health information, more attractive sanatoria, less waiting for admittance to sanatoria, closer cooperation with private physician, provision for support of dependents. Varrier-Jones (51, 154, 155) believes that sanatoria cannot succeed in getting the crucial early cases until opportunities for self-respecting self-support up to the maximum of physical capacity are provided. Without this, men will refuse to give up their vocations until they have to. He also advocates permanent sheltered employment for those who need long-term protective environment.

That resistance to treatment involves psychological problems of some consequence has been recognized by a number of writers. Banister (4), for example, suggests that an onset of tuberculosis marked by hemorrhage is easier to treat because something is clearly wrong and something must be done. On the other hand, the patient who does not have an acute initial experience may go on hoping and perhaps persuading himself that the diagnosis is not correct. Under such circumstances treatment is more likely to be resisted. This suggestion is in line with Morse's finding (103) that the majority of the patients who would not accept treatment were in the early stages of the disease and reported that they were feeling well.

We have found no investigations of methods of dealing with this problem. Breuer (18) discusses one aspect of it, however, and makes some suggestions based upon clinical experience. He considers the ambulant case treated from the office; he believes that such cases will increase in number as early diagnoses become more frequent. The problem of influencing such patients to follow the required regimen is extremely difficult. Breuer outlines a scheme for sensitizing patients to early signs of fatigue and for breaking down resistance to obeying these fatigue signs. In this the physician is primarily a teacher and four principles of instruction are recommended: 1) developing absolute confidence on the part of the patient in the physician, 2) explaining in detail the nature of the malady, the reasons for the regimen, and the dangers of failing to follow it, 3) keeping the ultimate goal in the patient's mind, and 4) keeping him informed of his progress.

Although this is a programmatic discussion, it seems to us to be of the type that should be put to experimental test. There is no more reason why the teaching aspect of the physician's work need be left to his native understanding than the medical aspects. We must recognize that these problems can be investigated as satisfactorily as the medical aspects of tuberculosis.

There is enough dissatisfaction among patients in sanatoria to cause about 30% of all patients to leave without the consent of the physician (42, 48, 50, 85). This is obviously an unfortunate situation for the individual patient and for his family and community, as such individuals are sources of infection and are seldom able to provide themselves with suitable care. Foster (48) reports that in one sample of sanatorium patients 60% of those who left with the physician's consent were living five years after discharge, while only 33% of those who left without consent were living. The number of citizens infected by the latter group before death is, of course, not known. According to the sanatorium directors and physicians surveyed by Frankel (50), the reasons patients leave against medical advice are: concern over affairs at home, dissatisfaction with progress of case, dissatisfaction with hospital life, desire to die at home. Banyai and Cadden (7) mention these other reasons: religious superstition, fear of surgery, search for better climate, wanderlust, misinterpretation of improvement, belief that treatment can be carried on at home just as well, homesickness, financial difficulties. They recommend compulsory hospitalization of the tubercular and discuss the laws of the states where compulsion is used at the present time. At a recent public health conference in California compulsion was recommended (153). These are matters amenable to psychological investigation and, without doubt, to some degree of control. Hudson and Fish (72) present a didactic discussion of some possible procedures along these lines. (For a more extended account of the psychology of the diagnosis and treatment situation see Chapter VI.)

The Psychology of the Sanatorium Situation

We have found no studies reporting sanatorium life as seen from the viewpoint of patients. After World War I systematic study of patient adjustment in Army tuberculosis hospitals was begun but was apparently not carried far (168). A great number of medical authorities have expressed opinions as to what should be done to create desirable sanatorium situations from the viewpoint of the patients' mental hygiene. Two aspects of these opinions stand out. First, most of them are general statements of the following order: "It must be emphasized that rest means not only physical, but also mental rest." "Cheerful patients and mentally stable patients show better progress." "More essential as a therapeutic influence is the attitude of warmth and interest toward each case which is adopted by the staff." "The chief benefit from work is that it promotes happiness." Second, medical men are often concerned with the nonpsychological aspects of factors in the patient's situation, such as housing and food.

Outstanding for championing a very different viewpoint is Varrier-Jones, founder and medical director of the Papworth Village Settlement in England (51, 154, 155). He suggests that the sanatorium treatment of tuberculosis has not accomplished what it is obviously capable of achieving, because of failure to recognize the essentially psyschological nature of a good treatment situation. According to Varrier-Jones (155) we must recognize that a good environment includes not merely good material conditions, not merely physical exercise, but a mental state. He says:

> Here is the true diathesis. . . . Much more than material conditions are responsible both for [the consumptives'] well-being, and for their success or failure in keeping the disease in check. . . . Enforced leisure may spell disaster . . . which could be easily avoided if the psychology of the patient were taken into account. . . . It is still believed by some that work simply as a therapeutic measure . . . is beneficial. This is not so. . . . Hope and work produce vitality. Neither of these alone will produce the desired results. Our new conception of the environment must provide a set of circumstances calculated to provide what we all recognize under the term 'well-being.' . . . Work is essential, but work of the right kind. It is fatal to well-being to be transferred to a different social group. No one can keep his well-being if degraded to an inferior occupation. Also it is disastrous to thrust responsibility on one not used to it. . . . Man does not become a philanthropist just because he gets tuberculosis. Many schemes provide that a man should give his labor to the cause. . . . [It is] far better to organize the work so that the patient can earn decent wages and pay for his own way. . . . Too often we regard diseased and disabled persons as inferior creatures. The man who has contracted tuberculosis has done nothing wrong. On the contrary he is frequently the victim of our present civilization. It is not for us to despise him, but it is rather our duty to compensate him for the wrong society has done to him. This we can best do, not only by restoring his working capacity, but especially by contriving the kind of environment which has been postulated so that the sense of well-being may be recovered.

It is in terms of this emphasis upon the importance of the psychological needs of tubercular individuals that the Papworth Village Settlement was developed. This institution provides medical treatment and opportunities for patients to contribute to their own economic and social well-being in a permanent colony.

Banister (4) likewise presents a psychological view of the tubercular's situation. He says:

> It is the organization of the individual's sentiments that is of prime importance. A man with his principal sentiments organized around some ideal which is not egocentric is able to bear the disorganization caused by the disease, to re-organize his life as may be necessary; the other, whose chief sentiment is ambition, or other self-centered sentiment, loses morale at once. . . . Toxemia by lowering vitality makes the personal problems loom larger, and this gives rise to worry, poor sleep, etc. Since rest is the main way of treating tuberculosis, it becomes essential to avoid these worries. Bromides are not a solution. Neither is work, unless it is directed at a solution of the worries; not because it gives the patient something to think about.

Other stimulating discussions of the tubercular patient's situation are given by Minor (98), Brown (20), Melzer (97), Stern (147), Ronce (127), Chevrolet (25), and Banister (5, 6).

As a basis for making inferences as to the psychological situation of the hospitalized patient, we shall list some facts about his general situation. Obviously these differ in important respects among different institutions and among different patients in the same instituion. Under *A* are listed conditions that hold generally; under *B* are placed conditions that vary widely from patient to patient:

A. General physical-social conditions of tubercular patients

1. Little pain or serious discomfort
2. Feelings of fatigue, weakness, and general slackness; vague symptoms
3. Slight relationship between feeling of well-being and seriousness of disease
4. Extremely slow changes in status of disease
5. Bed rest for long periods of time, with complete abandonment of locomotion
6. Cessation of all vocational activities for long periods of time
7. Separation from family, friends, and business colleagues
8. Relaxation of social obligations
9. Dependence upon the care of others for even elemental and personal requirements
10. Devotion of hospital staff to patients' welfare
11. Great amount of unoccupied time; idleness
12. Relatively fixed institutional routines upon which the wishes of the patient have little effect
13. Indefinite and unknown length of time until "cure" or death
14. Tuberculosis usually "takes some of the best years of life" when creativity, ambition, and responsibility, i.e., motivation, are greatest
15. Intimate, face-to-face, 24-hour contact with others with same disease; some in more serious condition, some in less serious condition
16. Emphasis within social group upon symptoms and physiological processes
17. Abundant diet

B. Conditions varying among different institutions and patients

1. Attitude of family and friends varies from ostracism and blame to friendly sympathy and encouragement
2. Financial condition varies from that of the pensioner who is without financial worries so long as he is ill, to persons who are financially and vocationally ruined by the illness
3. Sexes may be rigidly segregated or mixed
4. Social atmosphere of the institution may vary from that of a virtual penal institution to that of a resort
5. Avocational and educational activities may be available and encouraged, or may be unavailable and discouraged
6. Similar social classes and medical cases may be segregated, or a great variety of social and medical classes may be placed together
7. Climate and scene may be familiar or entirely new
8. Companions may be congenial or uncongenial
9. Hospitalization may afford escape from personal problems or intensification of personal problems
10. Course of disease may be uncomplicated by disagreeable or dangerous medical procedures, or it may be complicated by such procedures

If continued for a sufficiently long time, these physical-social conditions would appear frequently to lead to the following psychological situations:

Overlapping, antagonistic "healthy" and tubercular situations. One of the most important characteristics of the adult tubercular patient's psychological world appears to be the fact that it is comprised of overlapping "healthy" and tubercular situations. To some extent the tubercular patient's behavior is determined by the same factors that operated before he became ill. By virtue of becoming tuberculous the individual does not wholly drop the motivations or escape the pressures that guided his behavior as a healthy person. He now lives in two cultures, like the adolescent or immigrant (cf. p. 32). As with all such marginal persons, the potencies of the overlapping situations vary from person to person and from time to time in the same person. It is probable that in the beginning the potency of the "healthy" situation for the tubercular individual is relatively great, but that with the enforced isolation and the necessary preoccupation with imposed medical regimens and physical symptoms the potency of the tuberculous situation increases.

Without doubt these overlapping situations give rise to a great amount of interfering and antagonistic behavior, and the patient solves this conflict in the same ways that the adolescent or the immigrant does, namely: a) He attempts to behave in interfering or opposed ways at the same time, e.g., operating his business by telephone from his sick bed. Perhaps the most disrupting antagonistic behaviors arise from the patient's need for, and efforts to secure, affectionate support from his family and friends and the co-existing necessity of avoiding them to prevent infection. b) He oscillates between behavior appropriate for the tubercular and behavior appropriate for the healthy, e.g., working for a time and "giving up" for a time. c) He more or less consciously increases the potency of one or the other of the overlapping situations, e.g., engaging in foolhardy, "robust" behavior, thus emphasizing the evidences of his normality. d) He makes plans and engages in fantasy solutions of the conflict. e) He remains in a state of conflict, with inhibition of adaptive behavior and with resulting emotionality.

Howe and Mayne (70) found the percentage of febrile patients in a sanatorium to be greatest on visiting days. It may be that the greater potency of the home situation on these days, and hence the greater conflict and emotionality, is the cause of this periodicity.

For a few patients the overlapping "healthy" and tubercular situations will be less antagonistic. This will be true in the case of writers, for example, which may be one reason why a number of tuberculous persons have been able to pursue the vocation of writing.

The relative valences of the overlapping situations will vary from patient to patient, and with the course of the disease. It is probably true, however, that for most patients the immediate tubercular situation is of neutral or of only slightly negative valence. This arises from the fact that physical discomfort is usually not great, and the hospital staff is cooperative. The lack of a strong negative valence in the situation of the tubercular may be one reason for the superficial serenity of some patients. The negative aspects of the tubercular situation come more from the denial of positive satisfactions than from the imposition of present dissatisfactions. Without question the "healthy" situation is positive for most patients, and this leads to frustration when the impassable barrier between health and disease is encountered (72).

The source, definiteness, and strength of this barrier will vary greatly, depending upon the course of the disease and the kind of treatment. To some extent the barrier will take the form of acknowledged physical incapacity and to some extent it will be experienced as social pressure from family, friends, and medical personnel. If the onset of tuberculosis is marked by critical symptoms such as hemorrhage, and if the patient is cared for in a sanatorium, the barrier will be relatively definite and strong. But for the patient with no traumatic symptoms who receives medical attention at home, the barriers will be much less definite and more easily passed over, at least temporarily. These are undoubtedly important factors in the progress of the "cure". The patient for whom the barrier is indefinite and not absolutely impassable will be in a situation of greater conflict and will experience greater difficulty in accepting the limiting medical regimen.

The extent of common parts in the overlapping tubercular and "healthy" situations will also vary with the patient and with the course of the disease. In general, the mild case treated at home will have more in common with healthy persons than the severe case treated in a sanatorium. Other things being equal, the greater the extent of commonality with normal life, the less the frustration. However, in such a case other things are not equal; as mentioned above, barriers are likely to be less definite for the mild cases and a greater number of goals are just out of reach. Both these factors increase the severity of frustration.

New psychological situations. For most patients, tuberculosis is a terra incognita which they have not experienced, observed, or read about in any detail. Even for a sophisticated patient who knows something about the disease, the course of his own case looms uncertain. In this new situation as in all such situations, behavior will be unstable, full of frustration and conflict, and simultaneously radical and cautious (cf. p. 28).

Perhaps the most characteristic feature of the tubercular person's situation in this respect is the magnitude of the valences involved in the basic conflict. Each step (treatment, symptom, diagnosis) may bring the patient toward his death or permanent disablement or toward almost normal life. With such crucial alternatives involved, the utmost caution is engendered, or the conflict may be "solved" by denying its existence or avoiding the evidence of it. As Beverly protected herself from the trauma of being rejected by normal persons by avoiding and derogating them and their activities, so seriously ill persons may avoid facing the prospect of death by denying its possibility or misinterpreting symptoms. This dissociative mechanism may be another factor behind the superficial euphoria of some tubercular patients. Whether a particular patient will react in this way will depend upon his estimation of the seriousness of his condition, the extent of his fear of death or permanent disablement, and the strength and degree of unity of his personality.

The new psychological situation of the tubercular is a basis, too, for their frequently mentioned suggestibility. In a dangerous situation where the directions are not known and the structure unstable, a person inevitably responds to minor cues, i.e., to suggestions.

Small scope of life situation. The physical and social conditions of the tubercular individual makes it almost inevitable that the scope of his life situation will be relatively small. In the healthy individual, proprioceptive and visceral stimuli are predominantly below the limen of consciousness; the conscious world is localized largely outside the skin. This is changed in the following ways when a person is stricken with tuberculois: a) the patient is forcibly isolated from many previously operating, externally localized social and physical stimuli; b) there is an increase in the number and strength of the visceral and proprioceptive stimuli, e.g., fatigue and gastric disturbances; c) the significance of the internally localized symptoms for the individual's present and future welfare is greatly increased; d) virtually the only behavior that is not restricted is autistic.

With respect to scope, then, the situation of the tubercular adult in many ways shifts toward that of the healthy infant, and his behavior changes inevitably in the same direction. There will be a narrowing of interests and a focusing of attention upon the self, particularly upon processes governed by the autonomic system. Hypochondriasis and concern with sex are to be expected. Autistic behavior will increase.

Egocentric situation. Like the infant's social situation, the tubercular person's social group is in fact objectively egocentric. The members of the sanatorium staff are in some degree detached motor systems whose function is to gratify the needs of the patient. There is every reason to believe that living for any length of time under this regimen will lead to egocentricity on the part of the patient. In the almost completely enveloping sanatorium environment he can no more be immune to the complex process of acculturation than the child in the family. The effectiveness of this process will depend in an important degree upon the scope of the patient's life situation. (This problem is discussed in detail in Chapter VI.)

An important outcome of the egocentricity and small scope of the tubercular patient's situation is his conflicting dependent-dominating status. The paradox that the person who dominates others and achieves gratification of his needs through their activities inevitably becomes dependent upon those who serve him is met here in extreme form. Just as the infant both dominates and is dependent upon his mother, so the tubercular patient dominates and is dependent upon the medical staff. This is undoubtedly one basis of both the child's ambivalence to his parents and the patient's conflict with the doctors and nurses. It is difficult to be open and straightforward with those who both gratify and frustrate. Also, the combination produces a conflict within the patient: on the one hand he is supreme, and on the other he is the victim of his own helplessness. A healthy self-esteem is difficult in these circumstances.

Long time perspective. Future time perspective (49) is a concept useful in describing the situation of the tubercular person. The time span within which definite plans are made, i.e., the temporal distance of future goals, varies from person to person and from age to age. Two-year-old children make definite plans for only the next few minutes, school children may make plans for weeks in advance, adults set goals to be achieved in future years. This variable of the life situation has not been systematically studied, but a rough age-relationship is obvious. For the adult similar relationships to different diseases are clear. In acute diseases subject to sudden termination through death, future time perspective is necessarily limited: plans must be held in abeyance or carried through with great urgency; the future is too uncertain for long-time programs. With chronic diseases such as arthritis, on the other hand, where the status quo is rather permanent, definite plans can be made and gradually achieved. Tuberculosis is in this category. In the chronic stages change is usually slow, either for better or for worse, and the patient can look forward to months or years of a stable situation.

A relatively long time perspective always operates to decrease the immediate urgency with which actions are carried out, and to decrease the immediate influence of anticipated occurrences. In the case of tuberculosis this means that the outcome of the life and death conflict which confronts the patient is seldom immediately imminent. The possibility of death or permanent disability is always there but usually in the fairly remote future, within which the patient can make plans and carry them out within the limits imposed by his situation. This is, perhaps, another basis for the superficial serenity which seems so often to be underlaid with distressing anxiety.

Summary. A great diversity of behavior is expected in tubercular persons because of differences in the relevant variables in specific cases. Of particular significance are factors peculiar to the cultural milieu of the patient; Tomanek (150) and Herich (61) have found characteristic reactions for patients from the same social classes. Nevertheless some constellations of concrete factors would appear to be very common, giving rise to such frequently recurring behavior as:

1. Conflict, instability, vacillation, emotionality, foolhardy behavior (overlapping, conflicting situations)
2. Narcissism, selfishness, limited interests (small scope, egocentricity)

3. Hypochondriasis and preoccupation with sex even though the libido may be low (small scope, egocentricity)
4. Basic anxiety, overlaid with superficial serenity as a self-protective mechanism (new situation, immediate situation of neutral valence, and long time perspective)
5. Increased autistic behavior (small scope and substitute for frustration of normal satisfactions)
6. Suggestibility (new situation)
7. Ambivalence toward family and medical staff (overlapping egocentric situations)

Applications to Sanatorium Organization

When the preceding or other hypotheses are verified by appropriate investigations, a basis will be laid for the organization of medical and sanatorium procedures along optimal social-psychological lines. Necessary companion investigations must describe, in similar terms, the optimal psychological situation for the "cure" of tuberculosis. With these two kinds of knowledge it should be possible to devise practical methods of institutional organization for providing more adequate psychological situations for patients.

Medical specialists appear to be agreed that psychological factors are of the utmost importance for "recovery", and there is considerable agreement as to what these factors are, at least in general terms. The basic therapeutic procedure at the present time is complete bed rest. There is general recognition of the fact that this requires not only physical immobility, but also freedom from anxiety and emotional tension. Frequently mentioned as desirable too are courage, hope, and confidence.

The problem of reducing disrupting emotionality and anxiety is largely one for individual psychotherapy. Yet there are controllable factors in the sanatorium situation which affect the extent to which these tensions are experienced by the patient. Some of the sources of conflict and frustration which produce anxiety and emotionality have been discussed and we shall now consider these factors as they apply more particularly to sanatorium organization.

Overlapping, antagonistic tubercular and "healthy" situations. Without doubt the antagonism between these situations is in an important degree a product of the kind of sanatorium organization which exists. The "healthy" situation which the patient inevitably brings with him requires behavior which will contribute to his financial, vocational, and social goals. A sanatorium organized solely around medical routines will require behavior almost completely incompatible with this "healthy" behavior. However, for many patients the medical requirements can be shifted to allow for a considerable amount of achievement along these lines (72, 13). Education, vocational training, and part time work are all possible for many patients. It used to be thought that so-called diversional activities such as occupational therapy and recreation were valuable because they kept the patient's mind off his troubles. There is increasing recognition of the fact, however, that the value of any hospital activity derives almost exclusively from its contribution to a solution of the patient's personal problems. Education, vocational training and work, by allowing the patient to progress toward important goals, are effective in aiding his medical cure because they change the situation from one of conflict and frustration to a situation which provides some satisfaction. In connection with work programs, it should be clear that work which does not provide present financial returns or contribute to future vocational placement is almost certain to be useless, for these are central in most tubercular patients' lives. Varrier-Jones' remark that men do not become philanthropists just because they contract tuberculosis, and that any work program should provide financial rewards has been noted (155). This seems to be one of the important factors in the success of such developments as the Altro Workshops and Papworth Village. The success achieved during World War II in adapting specialized manufacturing and assembly jobs to bedside conditions in military hospitals should point to the possibility of a great extension of paid work in tuberculosis sanatoria. It seems possible, too, that many of the educational materials developed by the Armed Forces Institute should be directly adaptable to civilian hospitals.

A recognition of the fact that being occupied per se is not of therapeutic value may be behind the tendency, noted by Burhoe (23), for sanatoria to replace occupational therapy with educational programs.

The practice of dealing with patients in face-to-face groups within the sanatorium provides a social situation with great potentialities for both favorable and unfavorable adjustment of patients. It is apparent that sanatoria vary greatly in the way they handle this situation. In an account of one German institution it is incidentally mentioned that members of the staff are provided with side arms to enforce discipline (2), while a patient in another sanatorium reports that the time spent there constituted "the happiest days of my life" largely because of the congenial companionship he found (33).

Proven techniques are now available for objective study of the structure and morale of groups. With these techniques it is possible to investigate the effects of different sanatorium practices upon patient adjustment and "recovery" rates. Ultimately it should be possible to remove this aspect of institutional organization from the realm of personal opinion and establish sociological procedures whose effectiveness is as well verified as that of the medical procedures is today. This would appear to be one of the most promising fields of somatopsychological research.

New psychological situations. Here the basic conflict is between life and death, recovery and permanent disablement. This conflict is inherent in the tubercular situation. The only possibility of reducing this source of anxiety seems to lie in early diagnosis and in improved medical procedures. However, there are less deep sources of conflict in the new tubercular situation which can be removed. To most patients diagnostic and therapeutic procedures and hospital routines are entirely new; they know little about the meaning of these procedures or the significance of their own symptoms. Consequently routine and unimportant happenings can hold unwarranted terror for patients.

In a long-continued disease such as tuberculosis, the patient inevitably becomes an "expert" upon his own case. In most instances this knowledge comes from other patients or from the patient's own experience. During this hit-and-miss process much anxiety is bound to arise partly from misinformation and partly from ignorance. Much of this anxiety might be avoided if from the beginning an intensive educational program fitted to the comprehension and emotional needs of the patient were carried out (72). To a greater extent than with most diseases, the treatment of tuberculosis is an educational problem of influencing the patient to live the kind of life which will result in a permanently arrested case. Several textbooks on tuberculosis have been prepared for patients (59, 60, 161), but we have found no reports of systematic educational programs or of their effectiveness. Such programs presumably should be as important and as successful with the tubercular as they have been with the diabetic (cf. reference 11, Ch. VI). The regime of Breuer (18) mentioned earlier has some relevancy in this regard.

Small scope of life situation and other factors. It may well be that the tendency for the patient's world to become constricted is medically desirable. This would appear to contribute in some degree to more complete relaxation, through avoidance of overstimulation. On the other hand, if this tendency goes so far as to lead to great preoccupation with physiological processes and symptoms, it is contra-indicated. The problem of maintaining contacts with the larger world without overstimulation deserves systematic study. We would hazard the guess that this can be accomplished better by providing opportunities for the continued "token" satisfaction of the basic needs for self-esteem and social status than by use of diversional activities such as entertainments, radio, etc. The latter doubtless have a place, however, especially in the more acute cases.

Within the sanatorium the scope of the patient's situation may be increased by including him as an active agent in treatment procedures to the extent that his physical and mental capacities permit. He can also gain much, therefrom, toward a feeling of competence in meeting his own problems. Because he understands the reasons for prescribed treatment, actively approves of them, and cares for himself to the maximum of his ability, he inevitably experiences more freedom and success and less conflict and frustration than the patient who passively accepts optimal medical attention or has it forced upon him.

It is likely, too, that the conflict between the patient's attitudes of gratitude and antagonism toward those who care for him would be reduced by increasing his feeling of self-competence. The psychological advantages of a regime in which the patient is an active agent in his own treatment may well outweigh the medical and administrative convenience of traditional practices. This seems especially true for the tubercular whose ability to cope with his disease alone after discharge is a vital factor in avoiding relapse.

It appears probable that the relatively long time perspective of tubercular patients is favorable for reducing immediate tensions and is to be encouraged.

Suggestions for research. This discussion of possible approaches to the organization of sanatoria for maximal patient adjustment is frankly speculative. It is presented because it seems to us that this is one of the most neglected, yet most fruitful fields for social-psychological research. Methods and techniques have been developed in similar types of research in schools, clubs, industries, museums, and communities (34, 77, 89, 101, 126). In the sanatorium the social-psychological situation of the person can, perhaps, be more easily diagnosed than in some other institutional situations. The work of Dembo and Hanfmann (35) on the situation of the patient in a mental hospital is suggestive here so far as methodology is concerned. Certainly many indices of behavior can be easily obtained, e.g., restlessness in bed, food intake, behavior ratings, behavior records, projective tests, sociometric tests, clinical interviews. The great variety of social organizations now found in tuberculosis sanatoria should offer opportunities for "natural" experiments with a minimum of interference with routines.

So far as occupational therapy is concerned with the adjustments of patients, we cannot see that it has an important role, as traditionally conceived and practiced. This does not mean that it cannot have an important diagnostic and therapeutic function. In this connection the conception of occupational therapy as diversional is certainly inadequate psychologically. It is entirely possible that tuberculous patients, in their physically and psychologically regressed state, get some of the same emotional benefits from play activities that children do. If this is true, more primitive kinds of activities than are usually provided would be indicated. On the other hand, it may be that verbal catharsis is as beneficial for adult tuberculous as for normal persons. If so, rigorous training of occupational therapists in techniques of interviewing and counseling is indicated. It is obvious that the psychological significance of occupational therapy and allied services for the tubercular needs investigation and clarification. The recent text of Hudson and Fish (72) represents a highly desirable move in the directions we have suggested; Seltzer (140) should also be consulted. The whole problem is still one for research and requires systematic investigation and conceptualization.

The Social-Psychological Situation of Tuberculous Individuals after Discharge from Sanatoria

We are interested here in determining the effects of the social-psychological situation of the ex-patient. As with the situation of the patient in the hospital, we find virtually no research, although the problem may be easily investigated. There is considerable evidence, however, that the social-psychological situation of the discharged patient has a determinative influence upon his medical condition.

We have found one study of social and psychological factors in the causation of relapse. Moore (99) compared 40 relapsed tuberculous cases and 40 control cases who differed medically only in that the latter had remained in a quiescent state. Data were obtained on the Pressey Senior Classification Test and the Bell Adjustment Inventory, from a social history, and from a personal interview. The mean test scores were not significantly different in any case. However, there was a consistent tendency, which was supported by data from the interviews, for the control subjects to be more intelligent and better adjusted socially and emotionally. They had a slightly higher economic status, more education, and more extensive pre-tuberculosis work experience. Of the cases which relapsed, 45% named overwork as a cause; 22%, family problems; 22%, financial difficulties; 20%, over-ambition; 7.5%, night life; 5%, living conditions; 5%, thorocoplasty; 10%, no real reason.

Moore's results are not inconsistent with the general opinion that the causes of relapse after discharge from sanatoria lie in the personal, vocational, and social conditions confronting ex-patients. The basic fact is that most discharged patients have to go back to the same living conditions in which they developed tuberculosis, with the added burden of lowered resistance and the social and vocational stigma of being an ex-patient.

Burhoe (23) found that 20% of all admissions to sanatoria are re-admissions. Sawyer (131) reports that of 75 arrested cases in a photographic industry, 52% had relapsed within 1 to 5 years. Lawrence (85) found that 2 years after discharge 36% of his cases had been readmitted to the sanatorium. An able discussion of the post-sanatorium problem is given by the British Employment Committee of the Joint Tuberculosis Council (169).

Under favorable post-santorium conditions, however, the picture is improved. The Papworth Village Settlement reports an expectation of life in arrested cases three times that usually given in sanatorium statistics (154). The Altro Workshops report (144) that of the cases discharged to them, even those having advanced lesions when treatment was begun survived to the extent of 45% 10 years after discharge; those with minimal and moderate lesions survived to the extent of 87% and 70%. Barnes (9) reports the results of employing arrested cases in a sanatorium under conditions of work suited to the medical state of the patient; 69% of such patients survived from 2 to 13 years after discharge as compared with 55% of a control group discharged to their homes and whatever work they could get. Pinner and Weiss (116) found that of 67 arrested cases employed by a sanatorium, 21% relapsed after working an average of 1.7 years. Brieger (19) reviews many such statistics and comes to the conclusion that after-care is a crucial factor in further progress with the tuberculosis problem. Burhoe (23) found that in 1934 approximately 25% of discharged patients died in a short time, 25% were able to solve their own employment problem without help (i.e., they were independent financially or had professional training or skills appropriate to a suitable ex-tuberculous life). The remaining 50% of discharged arrested cases needed special vocational conditions if they were not to relapse and have the treatment repeated with less prospect of success, or become foci of infection in the community. By sanatorium treatment it is now possible to secure an arrested condition in many cases, but this effectiveness is largely wasted if the after-conditions are such that relapse occurs. The very success of sanatorium treatment has made suitable after-conditions more important than ever in the problem of prevention, for as Varrier-Jones has said, "Dead consumptives infect no one; live consumptives may infect many."

This important aspect of tuberculosis is a social-psychological problem even more than a medical one. Investigations to determine the after-conditions most conducive to continued quiescence of the disease, and arrangements to secure these conditions are needed. With infectious diseases of short duration, quarantine can be required and enforced. But with tuberculosis, other social procedures are generally considered necessary to assure segregation of active cases and their optimal treatment, although compulsion has been advocated and is used by some states.

Again we have had to resort to combing the literature for facts and incidental information about the social, vocational, and physical condition of ex-patients in order to formulate relevant hypotheses. As with the sanatorium situation, we shall describe the ex-patient's situation as seen by him and as it affects him.

The following facts hold for many tubercular patients after discharge (where the facts are not obvious, supporting data are given):

1. Physical strength and vitality are lower than normal; the ex-patient is unable to engage in strenuous or fatiguing activities.

2. It is frequently necessary for the ex-patient to change his vocation. Burhoe (23) found that 60% of 4,000 sanatorium cases in 1934 had gone no farther than the 8th grade; since ordinary labor is ruled out as an occupation, many of these patients would have to be trained for new jobs. Sawyer (131) found that of 100 employees in a photographic industry who developed tuberculosis, 50% were ultimately able to return to their old jobs, 11% returned to different jobs in the same industry, and 39% were unable to return to photographic work. Siltzbach (143) reports surveys which show that approximately 50% of patients discharged from sanatoria require vocational retraining.

3. The arrested tuberculous case is excluded from employment in many businesses.

Hochhauser (65, 66) in 1938 questioned 219 employers as to their policy in employing ex-tubercular patients. Of those who replied to the questionnaire, 95% said they would re-employ their own arrested cases, and 34% said they would hire arrested cases as new employees. Hicker (62) reports that the Vocational Rehabilitation program has hesitated to take arrested tuberculosis cases for retraining because of the public attitude toward hiring them. Shortley (165) shows that in 1944, 2,668 pulmonary tuberculosis cases were reported as vocationally rehabilitated by the bureaus under this program. These cases constituted 6.6% of the total number thus rehabilitated in that year but they were only a small part of the ex-tuberculars who could have profited by rehabilitation in 1944. Gehrmann (53) reports that the chemical industry cannot afford to hire arrested tuberculosis cases because the employer is liable for any aggravation of an existing condition. He states that the industry cannot bear this responsibility alone. Brahdy (16) reports that sanatoria are often hesitant to employ ex-patients because reactivation has sometimes been designated an occupational disease and the sanatoria held responsible. Willis (160) mentions the danger of this reaction on the part of industry in Michigan, where tuberculosis was made compensable in 1943. Marcy (92) also stresses this factor.

We have found few data upon employment experience with persons having arrested tuberculosis. Sawyer (131) states that experience with such cases in a photographic industry, has shown that more time is lost by them than by the average employee. Pinner and Weiss (116) report upon 26 years' experience in employing ex-patients in a sanatorium: 19% of the 83 ex-patients employed during the years 1914–40 developed active tuberculosis and the working time lost was 3% for the total group. They state that this drawback is to some extent compensated by the fact that the turnover among ex-tubercular employees is less than half as great as among nontubercular employees. Barnes (9), in an earlier similar study (1906–19), found that 21% of ex-patients employed by a sanatorium relapsed during employment.

A discussion of the dangers of tuberculosis in various occupations and of the viewpoint of insurance carriers and labor will be found in *Tuberculosis in Industry* issued by the National Tuberculosis Association in 1942 (170). The uncertain responsibilities of employers for reactivation of tuberculosis under Workmen's Compensation Laws are discussed by Quaintance (123) and Willis (160).

That the reluctance of industry to hire persons with arrested tuberculosis is not due to the absence of jobs which they can perform adequately is indicated by a survey conducted in 1943 by the U. S. Civil Service Commission (167). The medical staff of the Commission surveyed about 3,000 jobs in government establishments and in industries having government contracts to determine the physical demands of these jobs. On the basis of this study, over 1,000 of the jobs were designated as suitable for employees with arrested tuberculosis. This compares with 60 jobs designated for persons with both legs amputated, 85 for the totally blind, 450 for persons with one hand, and 1,900 for the hard of hearing. It seems clear that the number of jobs suitable for the ex-tubercular is far greater than the number of such persons in the population. It is possible that wartime experiences with tuberculous employees will change the attitudes of employers in some degree.

Sawyer (131) suggests the following reasons for refusing to hire ex-tuberculars: possibility of relapse and consequent loss of time, prejudice of the public against employment of the tubercular and expecting others to work with them, fear of being held responsible under Workmen's Compensation Laws in case of relapse. Other factors which may play a role are: increased cost in connection with job assignment, reduced flexibility of personnel, and fear of rapid labor turnover.

4. The family, friends, and acquaintances of ex-patients ostracize them in varying degrees.

Many general articles report experiences by patients which lead them to believe they are being shunned by persons formerly close to them. For example, Strecker, Braceland and Gordon (148) quote the remark of one patient, "I could never go home again. My wife comes to see me and does not even shake hands with me." Others, they report, keep their whereabouts secret, and some plan to migrate to new localities where their tuberculosis histories will not be known. Moore (99) found it necessary to assure her stabilized, arrested cases that their names would not be used in her study as "they feared the loss of their job might result if their employers or fellow workers ever found out they had had tuberculosis." More exact knowledge of public attitudes is highly desirable. Dufault (38) suggests that in Western culture tuberculosis is linked in the mind of many with weakness, poor heredity, and a failure to live up to a generally admired standard of health and strength. The social significance of tuberculosis in different cultures has not been studied so far as we have been able to discover.

5. The ex-patient has to live according to a special regimen, with the limits of what can and cannot be done indefinitely known.

6. The ex-patient does not look ill or weak.

7. Strength and vitality increase gradually.

8. The ex-patient faces financial difficulties; he needs a job in order to live.

9. The ex-patient returns to housing and other environmental conditions unsuited to the healthful living regimen required.

Keddie (80) studied 20 discharged patients who were able to move from the poor unhygienic housing in which they had become tubercular to new and good homes. He reports an improvement in health compared with those whose housing was unchanged.

10. The ex-tubercular has lost out in competition to achieve and experience the desirable things of life.

11. He is in the prime of life.

The way these factors are combined will differ from case to case. However, it seems possible to outline the broad characteristics generally found in the psychological situation of tuberculars in the months immediately after release.

These frequent characteristics of the ex-tubercular's social and physical situation would appear to justify the hypothesis that, in fundamental respects, his psychological situation is similar to that of the adolescent. The ex-tubercular occupies a marginal, overlapping position between an underprivileged minority group, the tuberculous patient, and a privileged majority group, the healthy individual. The basis of admittance to these groups is physical: it is partly the ability or inability to engage in certain kinds of behavior, and partly the possession of certain physical symbols valued by the dominant majority. In these respects the situations of the ex-tubercular and the adolescent are identical. Furthermore, the characteristics of the overlapping situations are similar in both cases. We have already pointed out that the situation of the tuberculous patient is like that of the child, and the healthy adult situation is identical for the ex-tubercular and the adolescent. Below are listed the common characteristics of the ex-tubercular and the adolescent which lead us to this assumption:

1. Physical strength and vitality lower than that of healthy adult
2. Frequently necessary to choose and prepare for a new vocation
3. Excluded from employment by many businesses
4. Frequently looks like a healthy adult
5. Gradual change of physique toward that of normal adult
6. Sometimes ostracized by members of healthy majority

To the extent that these factors are determinative of their behavior, one would expect that of adult ex-tuberculars to be identical with that of adolescents. Unfortunately we have been unable to find records of the behavior of ex-tuberculars to test this prediction. We are strongly of the opinion, however, that the types of behavior described in the adolescent record of Tolstoi (cf. pp. 38 ff.) would be found among ex-tuberculars, though the content of the actions of course would differ.

The total picture of the ex-tubercular's behavior would be modified by the characteristics of his situation which differ from those of adolescents. For example, we find nothing in the adolescent's situation exactly paralleling the following which are frequent in that of the ex-tubercular:

1. Faces financial difficulties; needs a job in order to live
2. Unsuitable housing and living conditions
3. Has lost out in competition to achieve desirable things of life
4. Is in prime of life

Nevertheless, many adolescents undoubtedly experience these conditions in some degree even though they may not exist objectively. In any case such factors would appear to exaggerate rather than diminish the adolescent-like behavior of adult ex-tuberculars. Basically, recovery from tuberculosis is a growth process and the traumas encountered will be identical with those met in outgrowing childhood. However, the physique of the ex-tubercular cannot stand what the adolescent's physique can stand; hence the frequency of relapse.

That the effects of such general conditions as have been postulated will be modified, often very greatly, by the unique aspects of the individual life situation should always be borne in mind.

The psychological factors in the rehabilitation of the arrested tuberculosis patient will be essentially the same as those discussed in the organization of sanatoria, although the practical means of achieving these psychological ends differ. Undoubtedly, important factors in relapse are anxiety and emotional tension, and their sources lie predominantly in overlapping, antagonistic situations and in new situations. Much can be done to diminish these factors. The essence of the sheltered workshop is that it removes the antagonism between "healthy behavior" and "tubercular behavior" by making it possible for ex-patients to behave like normal adults in accordance with the demands of their physical condition. The psychological significance of vocational retraining lies largely in the removal of some of the "newness" from the important new vocational situation confronting the ex-patient, and in the weakening of restrictions upon entrance to normal life.

Systematic vocational training and temporary sheltered employment, combined with education of the dominant healthy majority to reduce the tuberculophobia which leads to the erection of unnecessary social barriers against the ex-tubercular, would appear to solve most of the general psychological problems facing ex-patients.

The fear is not infrequently expressed that sheltered conditions foster dependence and failure to make the transition to normal life. One writer is quoted as saying that sheltered workshops "take in sick, self-respecting workingmen and turn out healthy loafers." It must be recognized, of course, that any cultural change is difficult and that some persons will shrink from the traumas involved. This is true of adolescents who cling to their childhood security, and of immigrants who clannishly maintain an island of old world culture in the new. It is bound to occur with some ex-tubercular patients also. The cure for this reaction, however, is not the tough sink-or-swim proposal of most of those who mention this danger. Such procedures only strengthen the conditions giving rise to undesirable behavior. Unless there are psychoneurotic factors present requiring individual psychotherapy, the strengthening of ex-tuberculars by gradually diminishing the protective environment until they can cope successfully with the requirements of normal living seems to be the only psychologically sound procedure.

The types of sheltered employment available to ex-tubercular patients at the present time may be indicated by the following examples:

1. The Papworth Village Settlement in England is a complete community with hospitals for bed patients, hotels for arrested single patients, and cottages for married patients and their families. Industries suitable for active and arrested cases are provided. The community of about 1,000 includes only a few nontuberculous individuals. It is intended to provide a permanent living arrangement for the members. There are several other such settlements in England, France, Switzerland, and Germany (51, 130, 154, 155). This kind of provision for the chronic tubercular has been criticized (96), as well as supported (79, 94, 95).

2. The Altro Workshop in New York provides work for about 150 ex-tubercular garment workers, under medical supervision. Employees work only the length of time prescribed by the doctor, and rest the remainder of the time in special rooms provided for the purpose. Employees live in their own homes in the city. Regular garment industry wages are paid. Special social work is done with the patients' families. Most employees remain from six months to three years before they graduate to regular employment; about 10% are permanent, ambulant cases who can never compete in regular industry. A few similar sheltered shops function in the United States and Canada (58, 67, 113, 143, 144).

3. The Olive View Convalescent Camp in Los Angeles is operated by the Los Angeles County Sanatorium for convalescent cases. The inmates do a considerable amount of the work of the camp. Several such camps are operated in conjunction with sanatoria (23).

4. Bellevue Settlement in New York is a boarding house for ex-tubercular women who work at regular vocations in the city. It aims to provide a hygienic regimen for the boarders (23). In Russia, too, "night

sanatoria" are reported to have been established to provide patients with necessary treatment and nutrition without discontinuing all work in their occupation (88).

5. The Prudential Life Insurance Co. provides sanatorium care for its employees who become tubercular and re-employs them under close medical supervision after their cases become arrested. Some other industries have similar arrangements (163).

6. Sanatoria have taken a lead in employing ex-patients under medical supervision. Burhoe (22, 23) found that in 1934, 78% of sanatoria in the United States employed some ex-patients, the proportion of ex-tuberculars on the staff reaching 80% in some institutions. Burhoe estimated that 3,500 ex-patients were thus employed, and that there were 30,000 suitable jobs in sanatoria. She believes that this represents one of the most practical sources of supervised employment for ex-patients. This proposal is supported by several other writers (16, 17, 28).

7. In England employers are legally required to hire their share of the disabled under suitable conditions (cf. Chapter VII). In 1934 Burhoe (23) estimated that not more than 1,000 ex-tuberculars were provided for in the United States by the first five schemes enumerated above. With the employment in sanatoria, the number of medically supervised jobs available was 5,000. This was far below the estimated need, and was considered to be one reason for the high relapse rate. There is no evidence that the situation has changed materially since 1934 and this has led to the proposal that employment of the disabled be legally required in this country. This would include the ex-tuberculars, and should have many advantages so far as they are concerned, since the ostracism they experience now is without doubt an important source of the anxiety and emotionality conducive to relapse.

8. Workmen's associations are reported in Russia (88) whereby persons invalided with tuberculosis are organized to manufacture wares in wide public demand. In these groups, the method of graduated labor has been applied and it is reported to have reduced the loss of working capacity and to have improved the clinical course of the disease.

The widespread need for vocational retraining of tubercular patients for both its therapeutic value and its rehabilitation value has been repeatedly emphasized. In spite of this, adult and vocational education programs appear not to be very general in tuberculosis sanatoria, although several programs have been described and highly recommended (24, 26, 27, 36, 41, 52, 68, 87, 93, 110, 119, 120, 124, 146). Education of tubercular children in public schools has not been extensively investigated. A report by the New York City Board of Education is one of the most recent (166). Tuberculous patients are eligible under the Federal-State Vocational Rehabilitation program, but the pressure from the great number of other types of disabled whose physical condition is more stabilized has been so great that relatively little has been done for the tubercular (63).

RESEARCH SUMMARY V

Social Behavior and Personality Characteristics of Tubercular Patients

Author: *Barglowski* (8)

Problem and subjects: Sexual urge of adult sanatorium patients. N = 20.

Method: Case history and interview.

Results: In majority of cases libido is unchanged from pre-disease state; in one case libido weakened; in several cases possibly increased.

Author: *Schiche* (136)

Problem and subjects: Emotional state of sanatorium patients. Most cases not severe. N not given.

Method: Author, a censor during World War I, analyzed correspondence from sanatorium community.

Results: Euphoria while by no means universal is definitely present in many cases. Especially, euphoria colors judgments of own physical condition. Verse-making increases with length of stay at spa. Sensitivity to perceptual life and to aesthetic influences increases.

Author: *Eyre* (44)

Problem and subjects: Emotional state of sanatorium patients. N not given.

Method: Interview.

Results: Basic emotion is fear; euphoria is a frequent cloak for hidden fear.

Author: *Wolepor* (162)

Problem and subjects: Personality characteristics of adult sanatorium patients before and during tuberculosis. N = 100.

Method: Interview and observation in sanatorium.

Results: Following types met: rebellious, quarrelsome, irritable, 22 cases; phlegmatic, placid, dissatisfied, 12; optimistic, hopeful, social, 7; restless, apprehensive, vindictive, 43. Most cases had the same type of personality before becoming tuberculous.

Author: *Forster and Shephard* (47)

Problem and subjects: Frequency of abnormal mental states in adult sanatorium patients. N = 100.

Method: Case history, interview, and observation in sanatorium.

Results: Normal mental state, 69 cases; simple maladjustment, 7; psychoneurotic (neurasthenia and anxiety), 20; psychotic trends, 4. No correlation between severity of disease and mental state.

Author: *Edwards* (40)

Problem and subjects: Temperament of tuberculous children in out-patient clinic. N = 20.

Method: Vernon tests of temperament and personality. Tuberculous children compared with healthy control group.

Results: Tuberculous children were: more nervous and irritable, less accurate in movement, poorer in planning ability, more restless, less self-confident, less virile, less reckless, more sluggish, less tenacious, more suggestible.

Author: *Peterson* (115)

Problem and subjects: Attitude of patients toward disease. N = 52.

Method: Interview.

Results: Frequency of attitudes as judged by social workers from constructive to destructive (as rated by tuberculosis medical experts): Courageous, 0; reasonable, 13; hopeful, 4; optimistic, 2; ashamed, 0; anxious, 6; depressed, 2; indifferent, 2; skeptical, 9; inaccessible, 0; discouraged, 3; pessimistic, 0; hopeless, 1; worried, 6; rebellious, 1.

Author: *Weigel* (156)

Problem and subjects: Frequency of neurotic and psychotic behavior in private sanatorium patients. N = 200.

Method: Interview and observation.

Results: 47% showed neurotic or psychotic symptoms; of these 69% showed restlessness, 55% hysteria, 53% insomnia, 27% neurasthenia, 26% gastrointestinal symptoms, 16% anxiety.

Author: *Williams and Hill* (159)

Problem and subjects: Patients' reaction to diagnosis. N = 1,499.

Method: Patients' retrospect.

Results: Positive reaction toward diagnosis (expected it, grateful for the truth), 38%; neutral acceptance, 12%; resistant to diagnosis (diagnosis not believed, disturbed, wished had not been told), 27%; indeterminate, 23%.

Author: *Jaensch* (75)

Problem and subjects: Psychological type of tuberculous patients. N not given.

Method: Type diagnosis.

Results: Tuberculars predominantly the synaesthetic type; characterized by lability, autistic thinking, shallow feeling, antisocial tendencies.

CHAPTER V

SOMATOPSYCHOLOGICAL SIGNIFICANCE OF IMPAIRED HEARING

Few systematic studies of the social and personal adjustment of persons with impaired hearing were made until two decades ago. There had been important progress in the medical specialty of otology in understanding the causes and treatment of hearing impairment. Educators had given much thought to the educational problems of children with impaired hearing and had conducted many experiments on the improvement of teaching methods. But it was not until the methods of clinical psychology were well developed that somatopsychological problems of the deaf and hard of hearing were investigated. The influence of Rudolf Pintner should be especially noted in this connection. During the 1930's he and his students produced a series of research papers which did much to stimulate scientific interest in the personality problems of the deaf, and to indicate the direction of future research.

Background Considerations

The Dilemma of Nomenclature

Until the end of the 19th century, individuals who had difficulty in hearing were broadly classified as deaf, and if without speech as well as "deaf and dumb." After the first Oral schools were established and it became possible for those born deaf to learn to talk, objections arose to this simple dual categorization.

In the ensuing search for a more adequate terminology, a number of factors played a role. The legacy of the past associated deafness with mental defect and childlike ignorance. It is understandable, therefore, that those persons who could distinguish themselves from the "deaf" strove for new group identifications. For a time, many adults who lost their hearing later in life insisted on the use of the word "deafened", but when the public merely substituted this for "deaf" nothing was gained and other terms were sought. Secondly, many of the educators of the deaf recognized the tremendous importance of language in the social adjustment of the deaf. For example, Josephine Timberlake, editor of *Volta Review,* wrote, "It is not the degree of an adult's deafness, so much as the intelligibility of his speech, that is important. Fluent written language . . . indicates his intellectual status; but it is fluent written language and intelligent speech that determines his social adjustment" (89).[12] Moreover, the observation that children totally deafened after the establishment of spoken language progress better in classes with children who can speak led many to the opinion that persons with impaired hearing should be classified according to speech and language ability rather than auditory capacity.

Accordingly, the Committee on the Deaf and Hard of Hearing of the White House Conference in 1930 set up the following definitions:

> The *deaf* are those who were born either totally deaf or sufficiently deaf to prevent the establishment of speech and natural language; those who became deaf in childhood before language and speech were established; or those who became deaf in childhood so soon after the natural establishment of speech and language that the ability to speak and understand speech and language has been practically lost to them.
>
> The *hard of hearing* are those who established speech and ability to understand speech and language, and subsequently developed impairment of hearing. These children are sound conscious and have a normal, or almost normal, attitude towards the world of sound in which they live. (106).

By no means did this lead to agreement among educators of the deaf. Seven years later, in 1937, a Conference of Executives of American Schools for the Deaf adopted definitions in purely auditory terms:

> The deaf: those in whom the sense of hearing is non-functional for the ordinary purposes of life. This general group is made up of two distinct classes based entirely on the time of the loss of hearing; a) the congenitally deaf—those who were born deaf; b) the adventitiously deaf—those who were born with normal hearing, but in whom the sense of hearing is non-functional later through illness or accident.
>
> The hard of hearing: those in whom the sense of hearing, although defective, is functional with or without a hearing aid. (89)

These latter definitions have won support in influential quarters (29, 48) on the grounds that the White House Conference proposal interjected social and economic factors, training, and adjustment into a problem of sensory measurement. Moreover, many other factors than those mentioned by the White House Conference are important in determining how a person will adjust. Thus, an individual born deaf, who accepts his handicap and works within its limits, may be better adjusted than one whose hearing becomes impaired after he has learned

[12] References to Chapter V will be found on pp. 320–325.

to speak and who makes every effort to hide his disability. The White House Conference definitions also imply that no one who is born deaf can speak intelligibly, and they make no distinction between the partially and totally deafened on the basis of physiological sensitivity to sound waves.

For these reasons, it seems wise to define the terms "deaf" and "hard of hearing" in terms of functional auditory capacity. For particular purposes, it will be necessary to make other distinctions as well. The deaf who can read lips with efficiency, who have lost their functional hearing after natural language acquisition, who have considerable sound perception, who are above average in intelligence, who have little schooling, who enjoy association with the hearing, who are juvenile delinquents, who have mechanical aptitudes, may all need special treatment depending on the purposes involved. The same is true with the hard of hearing. Particularly in the case of educational planning, the language status of the individual will have to be taken into account. For many purposes, the unique individual will need special study without "group" reference. Meyerson (60) has proposed a scheme by which several important characteristics of deaf persons may be described by brief symbols.

There are, of course, borderline cases whose hearing status is not clear. Whether the individual's hearing is "non-functional for the ordinary purposes of life" depends upon many factors other than sheer auditory capacity. Motivation and intelligence may be mentioned in this regard.

Fowler (26) offers the following tabulation relating measured hearing loss to functional capacity:

Decibel loss in speech range (better ear)	*Degree of handicap*	*Loss of hearing for speech at 5 feet*
I. Not more than 20*	Slight	Usually not noticeable, but faint whispers often misunderstood
II. Over 20, not more than 40*	Moderate	Soft or poor articulation often not understood
III. Over 40, not over 60	Moderately severe	Moderately loud articulation often not understood
IV. Over 60, not over 80	Severe	Even loud articulation often not understood
V. Over 80	Very severe	Very loud or shouted words often not understood
VI. No hearing	Total deafness	Very loud shout not heard

* Nerve deafness of less than 40 decibels causes little inconvenience at conversational distances. Classifications I and II apply more particularly to obstructive deafness.

The loss in decibels indicated in this table refers to measurements without a hearing aid. A person who has a hearing loss in the speech range of 60 decibels when he does not use a hearing aid, therefore, may be "deaf" since his "sense of hearing is non-functional for the ordinary purposes of life." With the use of a hearing aid, he may be classified as "hard of hearing." This is analogous to the individual who is "blind" without the use of special lenses.

Incidence of Impaired Hearing

The incidence of hearing difficulties is by no means easy to determine. In addition to the lack of agreement as to who shall be included among the deaf and the hard of hearing there are difficulties in discovering all those who should be included. Easily used hearing tests are not available, and many individuals are reluctant to admit their deafness. In the 1930 census, 57,000 persons were classified as "deaf-mutes" (102); the 1940 census did not enumerate the deaf. In the National Health Survey of 1935–36, 78,000 were so classified. According to this survey, more than a million and a half persons have hearing difficulties (103).

Most investigations place the proportion of school children with definite hearing defects between 5% and 10% (8). In an investigation by the American Society for the Hard of Hearing in 1939, the average incidence of impaired hearing among school children was found to be 6.9% or about 2,500,000 children (30). (Group audiometers were used in most instances and the criterion for impaired hearing was a loss of 9 decibels or more in the better ear.) It was estimated that 1% of the school population is in need of lip-reading instruction, the criterion being a loss of 15 decibels or more in the better ear. The White House Conference estimated 3,000,000 school children as having definite hearing defects (106).

Although the estimates vary and the proportion of the total population involved is small, there are many individuals with hearing limitations who must make the personal and social adjustments which this requires.

OBSERVATIONS AND OPINIONS CONCERNING THE DEAF

Casual Observations

Great numbers of casual observations of the deaf have been reported. Most of these describe the behavior of the deaf with no serious attempt to understand it; and even as observations, they often are little more than repetitions of commonly accepted stereotypes. Although studies of the stereotypes of the deaf and hard of hearing are lacking, the jokes and stories about them attest that such stereotypes are widespread. An illustration of the way misleading and harmful interpretations may arise is given in the following excerpt. This is a fictional account of an incident in the life of a deaf ten-year-old boy written by a person who has keen insight into the situation of the deaf (101):

IN A DEAF CHILD'S WORLD

Account	*Remarks*[13]
Donald didn't know why he was going home in the middle of the week, but as soon as the house mother came for him he knew something was the matter. The house mother smiled brightly at Don but turned to the teacher with a grave face, so Don wasn't fooled.	The situation is unclear for Don. He tries to pick up as many cues as he can to give meaning to it.
"Nice child," the house mother said. Then, "Bright?"	
"Well, he's not a very good lip reader, and his speech could be better, but he has a good mind. He adores his father. Too bad.	
Don caught the last words. "Father. Too bad!" Something had happened to his father. What was it? They would not tell him. Because he was deaf. He must find out for himself.	Don senses that something is the matter. He realizes that he will not be "let in." The only way out is to become a detective and fit the pieces of the puzzle together for himself.
In the office was a strange man. "Hello, Donny," the man said. I—am — your — Uncle — Dave — Don — I — came — to — take — you — to—your—father." "Oh, I can't tell him."	
Don remembered. "Uncle Dave. I know. Where father?"	Persons who do not have contact with the deaf frequently feel that the deaf have difficulty in understanding and therefore think it unnecessary to explain things. They also may find it "too much trouble" to do so.
"I'll tell him," the principal said.	
"No, don't tell him. Wait till his mother tells him. Just tell him he's going home with me."	
"Why father did not come for me?" Don demanded. What was this they would not tell him? He wanted to know everything the others knew.	Such exclusion may lead to behavior others regard as stubbornness (persistent behavior), suspiciousness (attempt to clarify fearful situation), or curiosity (attempt to clarify situation).

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[13] The remarks are those of the authors of the present monograph.

But all he could say was, "Where father?"

"Sorry to take him out of school," Uncle Dave said to the teacher. "But Bill, my brother, wants to see him before—before—" He stopped.

Don saw his Uncle had tears in his eyes. He saw "fight" and "life" on his lips. So his father had been in a fight and got hurt. He knew it all now.

He sat very still in the car with Uncle Dave. He noticed that they were not taking the familiar road home.

"I want home. I want father," Don tried to tell his uncle, but Uncle Dave just patted his shoulder. "Father isn't home. Father is in—in—father is in my town, Don. Wait till you get to your mother, son."

Was father in prison? That was where the men in the movies who were in fights went. "Where father fought? Who fought him? Father won?"

"One? One what? Oh, it's all right, Donny. Father's all right. Mother will tell you. Wait for mother."

When they got to Uncle Dave's house mother was not there, only Aunt Helen, who always talked baby talk to Don.

"Tomorrow, Donny boy. Tomorrow Donny boy will see his mother," Aunt Helen said over and over.

"Oh, Dave, this terrible thing happened and you can't even tell the poor child about it because he's deaf. He seems so unconcerned, too. So—er indifferent!"

The emotional tension resulting from the frustration may lead to blocking.

Don's repeated questioning is ignored. He puts together all the isolated cues which he can in an effort to make sense out of them. Gradually the situation takes on some meaning.

"Suspiciousness", "stubbornness", "curiosity", etc. must continue if Don is to discover whether his "meaning" corresponds with the true facts.

Uncle Dave makes no attempt to understand Don. Tries to reassure him with "it's all right", but such reassurance, without support of the situation as Don sees it, can only increase his suspiciousness.

Persons who have little contact with the deaf frequently treat them as if they were babies who need protection and who are not socially or intellectually aware.

Because many important details were not conveyed to Don, he thought he would see his mother. How can he trust his Aunt and Uncle now?

Aunt and Uncle have no understanding of what Don feels. They

"I couldn't get much out of him on the way here," Uncle Dave told her. "Well, I'm going over to see how Bill's making out."

* * * *

At last Uncle Dave came home. He was happy. "Bill's going to be O.K., and the other chap will get well, too. It's all right, Don. . . . Can't you be happy? It's all right!"

"Where is jail?" Don demanded. "I want father!"

"What does he say, Helen? Sounds like 'dale' to me. Well, come on, son. Better go to bed." Aunt Helen tucked Don in bed.

Don lay thinking about his father. Why did they try to fool him? How could everything be all right when father must stay in jail for years and years? Perhaps they wouldn't take him to see his father tomorrow. If he could only see him alone! Father would tell him the truth. He always did. If he could only find father's jail. Why not? He got up softly and dressed, and stole down the stairs and to the front door. He jumped. There was Uncle Dave, reading.

"Where are you going at this time of the night?" Uncle Dave was angry. "You're a bad boy! When we're all in trouble anyway!"

Don struggled in his uncle's arms, but he didn't cry, not even when Uncle Dave dumped him back in bed and locked the door.

exclude him completely from the situation and then interpret his cautious attempts to enter as "indifference".

Don is unable to accept the good news, partly because the new state of affairs has not been made clear to him, and partly because he has no basis for confidence in his uncle. Don wants to see his father. That alone will clarify the situation. Uncle Dave misinterprets his behavior and believes that Don just can't be happy.

Little effort is made to understand Don. Again Don is ushered out of the situation. He is given adequate physical attention.

Don feels that he is being fooled. He has little hope that tomorrow will bring him closer to the truth.

No attempt is made to understand Don's behavior. It is seen only as interfering with the adult's routine. Consequently, Don is a bad boy.

Then it was morning. Don dressed himself and let Aunt Helen help him with his washing-up.

Aunt Helen and Uncle Dave were different this morning. They watched him all the time, but did not smile at him.

They did take him to his father. Don knew it was the jail, for as they arrived a patrol wagon dashed up, and two policemen got out with a man whose head was all bloody.

Aunt Helen and Uncle Dave hurried him indoors. Uncle Dave knocked softly at a door. A white capped nurse came out.

Don went in first. There was his father, wrapped in bandages. Don's father smiled. "Hello, fellow," he said weakly. It must have been a bad fight, Don thought. He held his father's hand till his mother drew him away. She took him out and then she hugged him and wept over him.

"Mother, how long father jail?" he asked her. His mother did not understand him. She told him she must go back to father, and he must go back to school and be a fine, brave boy. "Father is better," she said. "Good-bye, my darling."

Don went to the car with his uncle and aunt. Uncle Dave grew more cheerful as school drew nearer. "Everything is all right, Don. Don't be so glum. Aunt Helen and I are not cross any more. Father is all right. You are all right." But of course they were fooling him again. How could things be all right with father in jail?

They arrived at the school. The principal was there. "How did you find things?" she greeted Uncle Dave.

His wishes and fears are not taken into account. He is regarded as an outcast.

Still no effort is made to understand Don's anxiety and to clarify events for him. Probably, it is not even thought he is worried. Particularly under conditions of stress, it is difficult to put oneself in another's position.

Reassurance without clarification of situation cannot reassure, particularly when cause for doubt and suspicion remain.

"Oh, everything's all right. My brother is going to get well.

"But say! I certainly take off my hat to you folks. These deaf children—so sly." Don saw him say "troublesome" and "run away", and he hung his head, and wouldn't even say good-bye to Uncle Dave.

"Queer child. We couldn't get him to make up with us at all," Uncle Dave said.

Don's attempts to make sense out of the situation are so completely misinterpreted. The misinterpretations are generalized to all deaf children. By this time, Don feels pretty helpless. Uncle Dave removes himself from all responsibility.

* * * *

The principal said kindly, "Now, Don, what happened? Tell me."

For the first time, an attempt is made to understand the way Don feels.

And in a flood of words Don poured it all out—all about the jail and the policeman and the fight and father's hurts.

The principal listened until Don finished.

Then she said slowly and carefully, "No, Don. You made a mistake. Father was not in a fight. He was hurt. Father's car hit another car. It was an accident. You did not go to jail. You went to the hospital to see father. Father will be well soon."

Don stirred. "One more!" he begged, and she said it all over again.

"No jail?" Don cried, "No fight? Not father's fault?"

"No, no, no! Father is all right. Father would not fight. Father drove the car."

For the first time, the situation is clarified. Don's need to understand all that happened is felt and care is taken that all his doubts and questions are answered. Now the reassurance can reassure, for it is in keeping with the possibilities of the situation as seen by Don.

Suddenly Don burst into wild sobbing. The principal drew him to her and stroked his hair. He stopped crying at last, and smiled at her.

The emotional tension resulting from the repeated frustrations is released.

This story shows how readily the behavior of the deaf may be misinterpreted. It also points to one important source of such misinterpretation. To a deaf person the meaning of a situation is often utterly different from its meaning to an observer with normal hearing, yet this difference is often not obvious. In such a case the observer judges the behavior of the deaf according to his own interpretation of the situation and hence necessarily misjudges it. The difficulty of appreciating how completely different the same objective situation may be for another person is the basis of many kinds of misunderstanding and intolerance. (Shifts in behavior in accordance with changes in the meaning of a situation have been studied experimentally. (See references 2, 96.) It is probable that this difficulty is even greater in the case of the deaf than in the case of persons differing from an observer in culture, age, or physique, for example. The deaf appear no different to the observer, and they are believed to have the same background of experience.

Observations and Conceptions of "Experts"

We have seen how readily, and oftentimes incorrectly, opinion concerning the deaf may be based on casual observation. This does not mean that only conclusions from systematic, scientific investigations are worthy of consideration. Many persons have published opinions based on long and acute observations of the deaf and the hard of hearing, and a number of persons with impaired hearing have written insightful accounts of their experiences. Brunschwig (12) and Welles (93) have made surveys of such writings. Brunschwig's survey is limited to the psychology of persons who lost their hearing very early in childhood and includes about 100 statements from some 40 authorities, most of whom are educators. Welles' review concerns persons who suffered a more or less severe loss of hearing in later life and is based on about 55 extracts from writings of 16 such individuals. Though these surveys refer to two different groups of persons with impaired hearing, the main views appearing in them overlap to a great extent and are treated together in the following summary:

Is there a basic difference in the psychology of persons with normal and with impaired hearing? Widely divergent views are expressed as to the extent of any such difference. Some believe that persons with impaired hearing have a "unique psychology", and that they "are not integrated on the same biologic level." Others hold that the deaf are no different from aurally unimpaired persons, and have "mentally and morally" the same capabilities.

Do the deaf have characteristic personality traits? Some of these writers express the view that persons with impaired hearing are subject to despondency, a sense of inferiority, hopelessness, introversion, supersensitiveness, fear, brooding, bitterness, suspicion, delusions of persecution, apathy, and listlessness. It is also said that they tend to be cruel, unsympathetic, egocentric, and selfish. Sometimes such behavior is attributed to a delay in emotional maturation which is supposed to occur among deaf children. On the other hand, others say that there are few psychoses among persons with impaired hearing, that they maintain an excellent equilibrium, that they do not feel keenly their misfortune, and that they are rather cheerful.

What kind of social adjustment is possible for persons with defective hearing? The opinion is often expressed that persons with hearing difficulties feel socially inferior. It is said to be inferred from their frequently strained facial expressions, harsh qualities of voice, exclusion from much social life, and misunderstanding of ordinary happenings. Consequently, it is assumed, the deaf become aggressive, withdrawn, isolated, clannish. They are also described as being deficient in manners, deportment, and tact. Habits of inattention and irresponsibility are supposed to develop. Curiosity, egocentricity, and lack of sympathy are also mentioned. On the other hand, some writers think that the deaf and hard of hearing are not an isolated class but that they can and do associate freely with those whose hearing is unimpaired.

What factors in the situation of the deaf affect their behavior? Physicians lay great stress upon the effects of fatigue poisons caused by the great effort expended by the deaf in maintaining their place in society. Tinnitus, pathologically created head noises, is the cause of much suffering and, according to some, is sufficient "excuse for most of the mental aberrations" of the deaf. The effect of absence of sound per se is also stressed as leaving a person unstimulated emotionally. Social isolation and the consequent loneliness of the deaf are held to be devastating in their effects. Limited contact with many of the incidental experiences of everyday living is said to make it difficult for the person with impaired hearing to understand life about him. The resulting curtailed interests are mentioned as offering few opportunities for the relief of "inward tension." Finally, limited vocational opportunities and enforced changes in occupation are generally recognized as of great importance.

How do persons with impaired hearing actually adjust to their handicap? Three reactions to the handicap are described: 1) A person may ignore its existence and pretend to understand what is said. This reaction is said to occur more frequently among persons who lose their hearing late in life. 2) The individual may withdraw from the world and accept a life of social isolation. 3) He may accept his limitations, face the facts of his situation, and live in accordance with them. The opinion is widely held that the problem of adjustment is much more difficult when the onset of hearing loss comes in maturity rather than in childhood. However, some writers hold the contrary view. Lip reading is usually considered to be of great psychological value because it removes feelings of inferiority and shame and centers attention upon social achievement.

This review of opinion shows that there has been much provocative thinking concerning the somatopsychological effects of impaired hearing. The divergent points of view expressed may not necessarily indicate profound disagreemnt in every case. It may be that the writers are referring to basically different situations, and that the error is the common one of generalizing beyond the limits of particular observations.

Experimental Investigations

The studies to be reviewed here have been grouped according to whether the subjects were children or adults, and in the case of the former, whether they attended special day or residential schools for children with impaired hearing, or regular public schools. In general, children attending special schools have a more serious hearing loss than those attending regular schools, and residential living introduces an important social psychological factor not present in the case of the day school children. Most special schools are also residential schools. The effects of specific factors such as age at hearing loss and means of communication are considered in separate sections.

Paper and Pencil Tests of Personality

Most experimental investigations of the somatopsychological effects of impaired hearing have made use of paper and pencil tests and measures of personality. In order to evaluate the findings of these studies, several requirements for the legitimate use of questionnaires and rating scales for subjects with impaired hearing must be made explicit:

1. The vocabulary must be within the comprehension of the subjects. Since deaf children generally have immature language development, a questionnaire suitable for normal children may be invalid for the deaf.

2. The situations presented must be within the experience and comprehension of the subjects. Since the experiences of deaf persons are frequently more limited than those of the nondeaf, the same questionnaires may not be suitable for both groups.

3. The situations presented must have the same significance for persons with impaired hearing as for those with normal hearing if the same interpretive labels are to be used in comparing the two groups. This point has been generally ignored. Failure to recognize this requirement is another instance of the error of ignoring the context of the behavior when judging its significance. The error is apparent in the following example: A negative response to the question, "Do you take the responsibility of introducing people at a party?" is scored for normal adults on one test in such a manner as to indicate introversive tendencies and lack of self-sufficiency (6). In the case of an individual who has difficulty in understanding the spoken word and in verbalizing his own thoughts, such a response has an entirely different significance, because the meaning of the situation is utterly different for him. This point is equally relevant to rating scales.

4. Inasmuch as strong biases respecting the deaf are probably common, ratings have to be interpreted with great caution because of the "halo" effect.

5. In using rating scales it is necessary to insure that the raters apply the same standard in making their judgments. This becomes especially important, for example, when the raters are teachers who teach only deaf or only nondeaf children.

6. Account must be taken of the fact that samples of the deaf in some studies have other distinguishing characteristics than deafness, e.g., long residence in boarding schools. Obviously, if the tests used were standardized on a representative population of persons with normal hearing, two factors are varied, hearing and institutionalization.

7. The use of a control group with normal hearing, ruling out all irrelevant variables so that obtained differences may be attributed to hearing disability, is desirable in studying many problems. But such an experimental design cannot reveal how the deaf as a group differ from people with normal hearing, in general, since such a control group may not be at all representative of the nondeaf population. Whether the research worker should use a control group of subjects with normal hearing or a representative sample of such subjects depends on the questions he wishes to answer. The question, "How does impaired hearing dynamically affect the behavior and adjustment of the individual?" may be approached by the use of a comparable control group of subjects with normal hearing. The question, "How do individuals with impaired hearing differ in their behavior and adjustment from individuals with normal hearing?" can only be answered by using representative samples of both groups.

When studies using paper and pencil tests take these factors into account, the findings may lead to fruitful conclusions, particularly in suggesting concrete problems for further investigation. For example, to the question, "Are you sometimes a bad boy?", 45% of the deaf boys in one study checked the answer, "I am not bad", in contrast to only 20% of a control group of boys with normal hearing (12). Possible reasons for this difference are: a) Asocial behavior is more generally tolerated in deaf boys than in nondeaf. Therefore, the former do not feel that they are bad. b) Deaf boys because of their greater restrictions are not as bad as nondeaf boys. c) Deaf boys are more egocentric than nondeaf boys and are therefore not so sensitive to social disapproval. Further investigation would be needed to determine which of these hypotheses is most adequate, but at least a concrete problem has been raised.

Studies of Children Attending Special Schools

Studies using personality tests. These are summarized in Research Summary VI, pp. 211–214, according to the personality test used. They reveal both the limitations of personality tests in this field and the direction this type of approach must take to be of any value. First, responses to individual items must be reported, for the reasons discussed in the preceding section. Unfortunately, Brunschwig's study is the only one in which item data are presented. The main results of her item analysis may be summarized as follows: As compared with children having normal hearing, those with impaired hearing more frequently report that they

Have a small number of playmates at a time
Engage in solitary activities
Prefer the company of adults to that of their peers
Have friendly relations with their teachers
Consider themselves to work harder
Consider themselves smarter
Consider themselves better liked by their teachers
Consider themselves prettier
Think that they have prettier clothes
Believe they play games better
Believe they play ball better

No clear cut differences appeared on questions relating to home and family adjustments.

It is probable that the restricted size of play groups among these children results in part from their greater difficulty in social communication. Contributing factors may be the character of school environment, and the less complex thinking of these children. Their preference for adult company may express the greater understanding they receive from adults, and their greater intimacy with their teachers. Brunschwig suggests the possibility that the friendlier attitude toward teachers may be due to living at school and attending small classes, rather than to deafness. Naffin has also observed more intimate teacher-pupil relations in schools for the deaf (63). The self judgments of superiority may be an attempt to rationalize their basic feelings of inadequacy, or may reflect a real feeling of well-being. These suggestions are clearly speculative; further investigation is needed to reveal the dynamic factors behind these differences in response. But at least the item analysis raises concrete problems and suggests hypotheses for further test.

In the studies reporting diagnostic scores the subjects with impaired hearing scored lower in general adjustment and higher in emotional instability and neuroticism than subjects with normal hearing. However, the serious methodological faults of some of the studies, pointed out in the comments, and the general failure to report the basic item data make it impossible to draw the conclusions implied by the labels.

Studies using rating scales. A number of investigators have studied the adjustment of pupils with impaired hearing by utilizing teachers' ratings of their behavior. This procedure has eliminated the difficulty arising from language retardation.

The Haggerty-Olson-Wickman Behavior Rating Schedules have been used by several investigators. These scales consist of two parts (35). Schedule A is a list of 15 behavior problems which are checked by the rater according to the extent to which they are manifested by the child, as shown in the following example:

Cheating:	Has never occurred	Has occurred once or twice but no more	Occasional occurrence	Frequent occurrence

Schedule B includes 35 intellectual, physical, social, and emotional traits, regardless of whether they would be considered problem behavior. An example is: "Does he act impulsively or cautiously?" Each of the 35 items is scored in terms of its predictive relationship to the total score on Schedule A, the higher the relationship, the higher the weighting. On both schedules, a high score indicates undesirable or problem tendencies.

The results of the three studies that have used these rating schedules on children with impaired hearing in special schools are summarized in Research Summary VII, pp. 214–215. Springer's study is the only one in which item data are presented. On Schedule A, the boys with impaired hearing were rated as having significantly more temper outbursts and more cases of stealing than boys with normal hearing, who were rated as less interested in their school work, however. The boys and girls in the control group were rated as being unnecessarily tardy more than those with impaired hearing. This may be due to the fact that some of the latter lived at residential schools. The children with normal hearing were rated as having greater speech difficulties. This is very surprising in view of everything that is known about the speech of deaf children. It sharply calls into question the comparability of the standards held by the teachers of the two groups. On Schedule B, the boys with impaired hearing were rated as superior to their control group in the following respects: more wide awake, better able to attend for long periods, more active mentally, more favorable impressions as to physique and bearing, greater physical energy, more attractive personalities, more cheerful and sympathetic, less suggestible. The girls in the control group were rated as being emotionally calmer than the girls with impaired hearing.

Due to the difficulties mentioned, the results of these studies are inconclusive. It should be noted, however, that the most adequately controlled study (Springer's) shows the smallest differences between the two groups. Whether their ratings are true or false, it is interesting to note that the general stereotypes of the deaf as mentally sluggish, inattentive, suspicious, and melancholy are not held by these teachers of deaf children.

Studies of social competence. It has long been recognized that social competence is closely related to an individual's efficiency as a member of society. Prior to the development of quantitative measures of intelligence, this aspect of behavior was the basis of legal definitions of intelligence. The British Royal Commission in 1908 defined an imbecile as a person who is incapable of earning a livelihood or of transacting his affairs with ordinary prudence. The question of social competence is of particular interest in the case of persons whose life situation involves special social limitations, as is true of persons with hearing difficulties. When in 1935 the Vineland Social Maturity Scale became available to measure this behavior, it was soon applied to the acoustically defective group.

The Vineland Social Maturity Scale consists of 117 items, arranged in order of their development in normal persons from birth to adult life (23). Each item is designed to indicate social competence in terms of successive stages of independence from the necessity of assistance and supervision by others. Representative items are as follows:

Bathes self unaided
Goes about neighborhood unattended
Is trusted with money
Tells time to quarter hour
Makes telephone calls

Whether a particular item characterizes a subject is determined by questioning him or persons familiar with his behavior.

Three studies using the Vineland Social Maturity Scale with children in schools for the deaf are summarized in Research Summary VIII, pp. 215–216. The main question arising in connection with the first two studies is whether the 20 point inferiority in social maturity is due primarily to defective hearing. In the first place, the factor of intelligence should be controlled. It has been shown that there is a positive correlation of .30 between intelligence and social maturity (85), and children attending residential schools for the "deaf" are somewhat lower in general intelligence as measured by nonlanguage tests than those attending day schools (91).

In the second place, the influence of residential living should be eliminated. An analysis of the items on which Bradway's subjects showed considerable retardation provides a basis for hypotheses as to some of the factors which may account for the differences obtained. The retardation was greatest on the items listed below:

Item number	*Behavior*
53	Goes about neighborhood unattended
59	Plays simple table games
60	Is trusted with money
61	Goes to school unattended
63	Uses pencil for writing
66	Tells time to quarter hour
73	Reads on own initiative
76	Makes minor purchases
77	Goes about home town freely
78	Writes occasional short letters
79	Makes telephone calls
80	Does small remunerative work
84	Enjoys books, newspapers, magazines
92	Goes to nearby places alone
93	Goes out unsupervised in daytime

At least seven of these items bear a fairly evident relation to hearing, speech, reading, and writing (items 63, 66, 73, 76, 78, 79, 84). Eight items may reflect the type of supervision characteristic of a residential school (items 53, 60, 61, 76, 77, 80, 92, 93). Burchard and Myklebust (13) stress this factor and on the basis of their findings urge that residential schools instruct children in certain phases of social activity, such as buying of merchandise, use of table utensils, and care of dress. Further evidence that children who live at home are socially more mature than those living in institutions is provided in a study by Doll and McKay (24), pairing 38 children in special classes for the mentally retarded in a public school with children of the same chronological and mental ages in an institution for the feeble minded in the same town. The public school children were superior on 33% of the test items of the Vineland Scale, but they were more superior on those items where self-direction was a factor. These results as well as those for the children with impaired hearing may mean either that the day school selects the socially more mature children, or that children living at home become more mature socially.

Doll and McKay believe that the greater social maturity of the public school children was not due to the differing regimes of the schools, since the general inferiority of the institutional group was not limited to behavior which the social environment might influence. However, in analyzing Bradway's results, we have seen that some of the items may very well reflect the effect of the residential school regime. The answer to this problem awaits a study in which day and residential school children are tested before they enter school and retested a number of years later.

These studies of social competence tend to show that children with impaired hearing attending residential schools are socially less mature and independent than children with normal hearing, but that this is not true for hard-of-hearing children attending day schools. It is not clear from available data whether the inferiority of deaf children in residential schools is due to lower intelligence, selection of the socially immature, differences in social stimulation provided by residential and day schools, or to other factors.

In these studies, the scores of deaf children have been compared with test norms derived from children with normal hearing. This has been justified on the ground that the social independence of a deaf individual must be studied in the world at large where he meets the competition of the people with normal hearing. While this is true in an immediate practical sense, an understanding of the important factors producing or inhibiting social maturity can only be obtained from analysis that goes far deeper than a comparison of norms.

Studies of fears. The fears of persons with impaired hearing are frequently mentioned in autobiographical accounts and articles expressing opinions. A few systematic investigations have been reported and are summarized in Research Summary IX, pp. 216–217. These studies are consistent in showing that children with considerable hearing impairment tend to be more fearful than normal children. In part this may reflect a greater insecurity in situations which cannot be adequately understood by children with impaired hearing, e.g., thunder, and darkness. One mother of a deaf child points out that these children are likely to be very frightened in blackouts because they are wholly at a loss when suddenly cut off from sight (50).

The limited amount of experimentation in this area has not done justice to the problem. One difficulty lies in the method used. Standardized lists of common fear-producing situations necessarily omit the more important anxieties growing out of the life conditions of the person with defective hearing. Much more flavor and feeling is obtained from accounts which describe the person's reaction to the situation's special meaning to him. A case in point is Don's extreme fear for his father (cf. pp. 164–168). Autobiographical accounts of persons with impaired hearing frequently reveal a fear of being considered "queer" or "stupid". Although such accounts are written by adults, they illustrate the point to be made. Thus, Miss Kennedy writes:

> I shrink with all the strength of my being from appearing, or from being looked upon by others, as lacking in average intelligence; and for this reason, more than for any other, I am willing to explain the nature of my own shortcomings. (45)

A man with impaired hearing expresses his fear of losing his job:

> I can't afford to do anything that would get me out of a job. I've heard that a deaf man can't ever hope to find a job if he once gets the "can". I just stick hard to my work. I keep looking around to see that there isn't a speck of dust anywhere. . . . The thing that worries me most is that somebody else might get my job. I've been head janitor in the same hotel for twenty years and I tell you it's hard work. I don't want to be any lower than I am. . . . Sometimes I think the boss gets mad at me 'cause I don't hear well and then I get to worryin' for fear I'm going to get the 'can'. (19)

It is true that such autobiographical accounts do not provide a means of determining the relative frequency of such fears in persons with normal and with impaired hearing. On the other hand, a list of fears on a paper and pencil test, which is selected on an a priori basis or from studies of normal persons, is very likely to give a barren or even distorted picture of the types of situations which are fearful to those with impaired hearing. It should at least be possible from the great quantities of autobiographical material written by persons with impaired hearing to design a paper and pencil test which would adequately reflect the life situations which produce their anxiety feelings.

Studies of wishes. Analysis of the available data on directly expressed wishes suggests that persons with impaired hearing are less conciously concerned with the desire to hear and speak than they are with desires for other satisfactions. Brunschwig (12) found that children with impaired hearing more frequently expressed wishes to have their parents love them more, to be smarter, and to have more friends, than for auditory and speech achievements. This was true, too, of the normal children in her study. In listing their first three wishes, only 8% of the children with impaired hearing expressed a desire to hear better, and only 10% expressed a desire to talk better. In Habbe's study of 48 hard-of-hearing adolescent boys in regular schools, not one listed a desire for better hearing as one of his wishes (34). Wile reports that the "deaf" as a whole are more concerned with ideas of love, adventure, power, and achievement than with a desire for hearing (95). Plant explains this relative lack of preoccupation of the deaf with their impaired hearing as follows: "Most of [these] children have been aliens in their environments and I submit that here is a problem for each far more important and persistent than that of the deafness" (75). The ability to hear well is considered a means to an end, and it is the end which has the more significant psychological meaning.

There is other evidence, however, that the desire to hear well is very real for persons with impaired hearing, and in some cases perhaps assumes the character of an autonomous need, an end in itself. In a study of the dreams of "deaf" children, Kimmins found that they reported conversations three times as frequently as did either normal or blind children (46). Moreover, many of the children stated that they also heard clearly in their dreams. Davis mentions that a favorite phantasy of "deaf" children is to put themselves in command of all their faculties, especially that of hearing, and then to picture all the things they will do (20). No actual data are presented, however. Menninger (58) makes the observation that "in those cases where deaf persons experience psychotic episodes, their hallucinations are very frequently of the auditory type, corresponding, of course, with the powerful suppressed wish to hear."

Studies of Children Attending Regular Schools

The subjects of these studies may be called hard of hearing since they would be so classified according to the definitions of either the White House Conference or the Conference of Executives (cf. p. 161). These children acquired language naturally and the large majority have considerable functional hearing. Studies of these children are reviewed separately since their life situation is vastly different from that of the children who go to special schools.

Studies of adjustment. The relevant studies are summarized in Research Summary X, pp. 217–219. They show a marked similarity in the personality test scores of hard-of-hearing and normal children attending the same schools. This is in line with the results obtained by means of personality inventories with the tubercular and the orthopedically disabled. Other methods indicated that adjustment problems were frequent in these cases, and there is reason to believe this is true of the group with impaired hearing also.

It is clear that personality inventories of the kind now available are inadequate for research on somatopsychological problems. If differences in diagnostic scores are obtained, the possibility that this is an artifact due to items of differing interpretive significance (cf. p. 172) cannot be eliminated. If, on the other hand, differences in scores are not obtained, the superficiality of the method leaves one unconvinced that important differences do not exist. The most that can be said is that within the areas of problems adequately examined by personality tests, the results indicate that the hard-of-hearing child is able to meet problems arising from hearing loss as adequately as he meets others. Habbe (34) concludes that if a hard-of-hearing boy's general adjustment to life is good, it is quite possible for him to resolve problems associated with his hearing.

The hearing of juvenile delinquents. A number of studies report the frequency of hearing difficulties among delinquent children (15, 61, 92), but the absence of adequate control groups makes the interpretation of the results difficult. Burt's (15) investigation is the best controlled; he found that 1½% of his 197 delinquent children had markedly defective hearing compared with none in his nondelinquent group.

Studies of Adults with Impaired Hearing

Studies of adjustment. In three extensive investigations the adjustment of adults with impaired hearing has been studied by means of personality tests (67, 74, 93). The Bernreuter Personality Inventory was used in each case, so the adequacy of this test for persons with impaired hearing is an important question. The inventory consists of 125 items which may be answered "Yes", "?", or "No" (6). The responses are scored for four traits: neurotic-tendency, self-sufficiency, introversion, and dominance. An examination of the individual items strongly suggests that the answers to a number of them would be predisposed in one direction by a hearing impairment, regardless of their intended psychological significance. Examples of such questions of varying interpretive significance are:

Item number	
28	Are you very talkative at social gatherings?
29	Do you ever heckle or question a public speaker?
32	Do you prefer travelling with someone who will make all the necessary arrangements to the adventure or travelling alone?
34	Can you usually express yourself better in speech than in writing?
38	Do you usually find conversation more helpful in formulating your ideas than reading?
59	Do you find it difficult to speak in public?
87	Do you take the responsibility of introducing people at a party?

In Welles' study it was recognized that should the diagnostic significance of many of the items be different for persons with impaired hearing, the Inventory would not be valid for them (93). Welles therefore asked three psychologists and six staff members of a league for the hard of hearing to point out such items, with the result that 15 items were so designated by at least one of the psychologists, and there was agreement upon five of them by at least two of the psychologists; 53 items were designated as biased by at least one of the judges with impaired hearing, and 10 of the 53 were agreed upon by the majority. Of 16 items which showed a statistically significant difference between the responses of Welles' subjects with impaired and normal hearing, only three were invalidated by the majority of the judges. This, and the fact that the difference in the average scores of the two groups on the neurotic-tendency scale was not appreciably affected by eliminating the 10 items marked by the majority of judges with impaired hearing, led Welles to conclude that the measure was valid for persons with impaired hearing.

There is other evidence, however, which bears upon this point. In the study of Pintner, Fusfeld and Brunschwig, six items were modified to specify whether the social situations referred to deaf or to nondeaf persons (74). The results indicate that deaf persons feel more uninhibited and at ease with deaf than with nondeaf people, as shown in the following tabulation:

Inventory question	*Percentage of persons with impaired hearing answering "yes"*	
	Men	*Women*
24a. Are you troubled with shyness among hearing people?	24	47
b. . . . among deaf people?	3	14
28a. Are you very talkative at social gatherings of hearing people?	9	14
b. . . . of deaf people?	41	47
54a. Do you often feel lonesome when you are with hearing people	48	65
b. . . . with deaf people?	8	2
87a. Do you take the responsibility of introducing people at a party of hearing people?	43	45
b. . . . of deaf people?	70	71
94a. Do you ever take the lead to put life into a dull party of hearing persons?	28	25
b. . . . of deaf persons?	68	61
118a. Do you keep in the background at social affairs among hearing persons?	44	58
b. . . . among deaf persons?	23	24

From this it seems clear that the meaning of the situation when involving deaf and when involving nondeaf people is vastly different, and therefore calls forth different behavior in the deaf. A nondeaf person in a group of deaf might display more withdrawn behavior than a deaf person, yet we would not conclude from this that the former is more introverted. It might be argued that since deaf persons live largely in a world of persons with normal hearing, their behavior with the latter is more revealing of personality. But before one can jump from behavior to a formulation of its meaning, as given by the labels neurotic-tendency, introversion, etc., the psychological significance of the situation producing that behavior has to be described.

Further evidence which casts doubt on the validity of the Bernreuter Scale when applied to persons with impaired hearing is given in this same study (74). The authors had six teachers at Gallaudet College (for deaf students) rate 50 students on the four Bernreuter traits. The average correlations of the teachers' ratings with the test results follow:

	r
Neurotic-tendency	—.07 ± .10
Self-sufficiency	.43 ± .08
Introversion	.14 ± .10
Dominance	.55 ± .07

Hence, either the scales for neurotic-tendency and introversion are invalid when applied to the deaf, or the raters did not identify these traits adequately.

The high intercorrelations of the four Bernreuter traits are also relevant in this connection (6). The neurotic-tendency scale and the introversion scale show a correlation of r = .95, while the neurotic-tendency scale and the dominance scale are correlated to the extent of r = —.80. This means that the traits, neurotic-tendency, introversion, and nondominance (submissiveness), are not well differentiated by the inventory.[14] In spite of these considerations, the authors of the studies feel that the Bernreuter scales can be applied satisfactorily to groups with impaired hearing. The evidence, however, is so unconvincing that we shall use the interpretive labels with caution.

The subjects used in the three studies and some comments regarding their selection are given below:

Welles (93): 196 women, members of organizations of hard of hearing, 40% of whom were selected because of good adjustment to their handicap. No data presented as to degree of hearing loss or language status. The control group consisted of 148 women with normal hearing of about the same age, education, and socio-economic status, who were friends of the hypacousic subjects.

Pintner (67): 94 persons living in rural communities and belonging to a correspondence club for isolated hard-of-hearing people. Average age at time of hearing loss, 22 years; average duration of hearing loss, 26 years. No data presented as to degree of hearing loss. Friends similar in age, education, and socio-economic background chosen by the hypacousic subjects served as a control group.

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[14] Flanagan has been able to isolate two unrelated factors to account for the variability in the scores, one which he calls a measure of self-confidence, and the other a measure of sociability, neither of which are related to the Bernreuter traits, judging from the correlations presented (25).

Pintner, Fusfeld and Brunschwig (74): 126 "deaf" persons from all parts of the U. S. selected through key persons. An attempt made to reach a representative cross section with respect to locality and socio-economic status. No data given to determine whether this goal was reached. No control group used. No data presented as to degree of hearing loss or language status.

The problem of obtaining adults with impaired hearing was expedited in these studies by making use of organizations of the hard of hearing. The question arises whether members of such organizations are typical of the general population of persons with hearing disabilities. While use of friends of the hypacousic subjects as control groups, as in Welles' study and Pintner's study may serve to equate to some extent such factors as social status and education, it tends to obscure personality differences inasmuch as friends are likely to be more similar than random pairings of individuals. Though Welles and Pintner refer to their subjects as hard of hearing, and Pintner, Fusfeld and Brunschwig to their subjects as deaf, the basis for the distinction is unclear.

The mean scores on the Bernreuter Inventory, expressed in terms of the percentile norms for the persons with normal hearing on whom the test was standardized, were as follows:

	Welles' study	*Pintner's study*	*Pintner, Fusfeld & Brunschwig's study*	
			Women	*Men*
Neurotic-tendency (B1-N)	57	69	60	61
Self-sufficiency (B2-S)	60	62	54	43
Introversion (B3-I)	66	74	63	57
Dominance (B4-D)	47	30	48	45

The equivalent percentile ratings for the controls of Welles' and Pintner's studies are not given since they closely approximate those for the standardization population.

The general conclusion reached by these investigators is that persons with impaired hearing tend to be slightly more neurotic, introverted, and submissive than persons with normal hearing, but that the large overlap between the two groups is more significant than the differences. In the light of the validation questions already discussed, this conclusion has to be considered with caution.

Welles presents the 16 items on which there were statistically significant differences in frequency of responses for the two groups. In comparison with subjects with normal hearing, subjects with impaired hearing

1. Are more often easily discouraged when the opinions of others differ from their own
2. Less often find conversation more helpful than reading in formulating their ideas
3. Less often prefer a play to a dance
4. Are less often careful in not saying things to hurt other people's feelings
5. Less often heckle or question a public speaker
6. More often feel reluctant, at a reception or tea, to meet the most important person present
7. Less often see more fun or humor in things when they are in a group than when alone
8. More often find books more entertaining than companions
9. More often have spells or dizziness
10. More often feel lonesome when they are with other people
11. More often have appeared as lecturer or entertainer before groups of people
12. Less often find people more stimulating to them than anything else
13. More often find difficulty in starting a conversation with a stranger
14. More often get as many ideas at the time of reading a book as from a discussion of it afterward
15. Less often face their troubles alone without seeking help
16. Can more often be optimistic when others about them are greatly depressed.

A number of these items might easily reflect the sensory handicap apart from its psychological significance for behavior although, as has been noted, only three such items were agreed upon by a majority of the judges.

Studies of attitudes. The way in which others regard persons with impaired hearing, as a minority group, deeply affects their feelings of ego-security, belonging to a group, and social status. Also, the attitudes of the minority toward the majority are significant for the individual's adjustment. These points will be discussed systematically in the last section of this chapter. Here, we shall consider two studies which present data bearing on these questions.

Strong reports the attitudes of about 3,000 men between the ages of 20 and 60, representing mainly professional, semiprofessional and clerical occupations, who were asked to check whether they liked, disliked, or were indifferent to persons with certain distinguishing physical characteristics (86). Several significant tendencies may be noted from the following tabulation:

	Percentage		
Item	*Liking*	*Disliking*	*Indifferent*
Very old people	45	11	44
Cripples	29	13	58
Foreigners	25	14	61
Blind people	25	16	59
Sick people	22	28	50
Deaf mutes	16	25	59
Negroes	13	32	55
People with protruding jaws	6	42	52
People with hooked noses	4	38	58
People with gold teeth	4	46	50
Side-show freaks	4	77	19

1. The majority of subjects (59%) said they were indifferent to deaf mutes.

2. Of those who were not indifferent more reacted unfavorably than favorably, in contrast to their predominantly favorable attitude toward very old people, cripples, foreigners, and blind people.

3. However, the reaction was less frequently unfavorable to deaf mutes than to persons with generally less disabling physical deviations such as protruding jaws, hooked noses, and gold teeth.

It is probable that the reaction to the classifications "deaf" and "hard of hearing" would have been less negative than to "deaf mutes", but relevant data are not available. The purpose of Strong's research did not lead him to attempt any explanation of his facts.

Heider and Heider (39), however, offer some penetrating insights to account for the more favorable reaction to the blind than to the deaf. It is postulated that persons with normal hearing consider the deaf more similar to themselves than the blind for at least two reasons: blindness, but not deafness, is generally a readily observable handicap; normal persons temporarily experience silence with less grief than they experience darkness. Thus, the behavior of a deaf person appears incongruent and is easily attributed to an inferiority of the personality. It is also suggested that deafness by affecting the sphere of language makes possible many more forms of humor than blindness. The high frequency of jokes about the deaf described in Chapter III supports this contention.

The Heiders studied the behavior and attitudes of the nondeaf toward the deaf *as seen by persons with impaired hearing* (39). They report that 86 former pupils of schools for the deaf spontaneously mentioned the following attitudes in letters and interviews:

> a. People with normal hearing are impatient with the deaf person's questions and "slow up-take."
>
> b. Whispering by nondeaf persons about private matters in front of the deaf makes the latter feel suspicious and discriminated against.
>
> c. Nondeaf people think that if you can't hear speech readily, you can't understand either, and that hence you are inferior.
>
> d. Nondeaf people pity the deaf.
>
> e. Deaf people are overprotected by, and lose their freedom to, those with normal hearing.
>
> f. Nondeaf people slight and take advantage of the deaf.
>
> g. Nondeaf people are actively hostile; they tease, and make fun of the deaf.
>
> h. Only a few nondeaf persons are understanding in their relations with the deaf.

The Heiders point out that the deaf may exaggerate or misinterpret the behavior of persons with normal hearing, that innocuous and situation-demanding behavior on the part of the latter may be misinterpreted by the deaf according to their stereotype of the nondeaf.

The subjects of the Heiders' study also criticized the deaf as a group:

> a. The deaf are said to talk too much about themselves, to go too much into detail, to talk about others, etc.
>
> b. The deaf are mentioned as being socially immature and dependent.
>
> c. The manners of the deaf, though blamed on school and family, are criticized.
>
> d. The educational and cultural inferiority of the deaf is noted.

As a further expression of their attitudes toward persons with normal and with impaired hearing, some of the Heiders' subjects stressed the advantages of association with the deaf because of greater social satisfactions, easier communication, and avoidance of criticisms. Other subjects stressed the advantages of association with normal persons because of greater social satisfactions, opportunities to learn more, the possibility of improving speech and lip reading, and a desire to have the same outlook on life as those with normal hearing.

The subjects with impaired hearing spontaneously mentioned unfavorable attitudes of the nondeaf toward the deaf more frequently than favorable attitudes. From this it seems likely that deaf people feel themselves, in general, to be in the position of a minority group which is discriminated against and held in low social regard by the majority.

Summary

The available data on the personality and adjustment of persons with normal and impaired hearing lead to the following conclusions:

1. The scores on paper and pencil tests of personality made by children with impaired hearing, who attend special residential schools, show them to be more poorly adjusted, more unstable emotionally, and more neurotic than children with normal hearing. The scores of hard-of-hearing children attending regular schools are markedly similar to those of children with normal hearing. The scores of adults with impaired hearing show them to be slightly more neurotic, introverted, and submissive than adults with normal hearing. However, since most of the tests include several items of differing interpretive significance and since such concomitant variables as residential environment, intelligence, and socio-economic status have not been ruled out, little faith can be placed in these results.

2. Studies using rating scales are inconclusive because of serious methodological considerations. However, it is clear that teachers do not rate deaf children in accordance with common stereotypes.

3. The social competence of children with impaired hearing attending residential schools is less mature than that of children with normal hearing. This is not true of children who attend day schools for children with defective hearing. Whether this is due to selection, or to the effects of environmental differences has not been established.

4. Children with impaired hearing tend to have more fears than children with normal hearing.

5. Data regarding wishes suggest that the desire to hear and speak better is directly expressed less frequently than desires for other satisfactions. There is some evidence, however, that on unconscious levels, the desire to communicate effectively is strong and sometimes assumes the character of an autonomous need.

6. There is considerable evidence that adults with impaired hearing feel themselves to be in the position of an underprivileged minority.

The Influence of Particular Factors within the Group with Impaired Hearing

The preceding sections have compared groups of persons with impaired and normal hearing without raising questions concerning the influence of such factors as age at loss of hearing, deaf relatives, means of communication, etc. Studies of these factors will now be discussed, and the opinions of authorities will be presented where they clarify problems.

Degree of hearing loss. In many studies correlations between degree of hearing loss and measures of personality and adjustment have been computed. These studies are summarized in Research Summary XI, pp. 220–222. The results supplement those of the studies of groups widely divergent as to extent of hearing loss, which have already been reviewed. The findings show no consistent tendency for degree of hearing loss to be related to adjustment scores. Most of the correlation coefficients are low and unreliable. The three which are statistically significant all show a tendency for greater hearing loss to be associated with poorer adjustment. However, the methodological considerations previously discussed justify questioning the validity of these relationships. In view of the uncertain differences between persons with normal hearing and with severe loss of hearing, these low and unreliable correlations are not surprising.

Age at loss of hearing. This factor has been recognized as important for educational and adjustment problems of the auditorily handicapped primarily because it is associated with language acquisition. It will be recalled that this consideration dominated the controversy over nomenclature. The relevant studies are reviewed in Research Summary XII, pp. 222–224. The findings of these studies are not consistent. A few tend to show greater problems of adjustment when loss of hearing occurs at young ages; others tend to show the reverse. Most of the relationships are statistically unreliable.

From subjective accounts and critical observations it becomes understandable why age at loss of hearing, per se, is not dynamically related to ease of adjustment. Each period of life brings special problems of adjustment. Some writers point out particular problems which are met when loss of hearing occurs relatively late in life. Necessity of retraining along economic lines is frequently mentioned:

> . . . forty per cent of those who become deafened in late adolescence or later on are obliged to change their occupation and . . . many more must adapt themselves to some other phase of that occupation (77).

Baldwin refers to the plasticity of youth and the comparative rigidity of maturity which makes adjustment to loss of hearing in adulthood "less a process of developing than of subduing and reorganizing a personality already strong in itself" (4). The Heiders present a number of quotations to indicate that individuals who lose their hearing later in life are more conscious of the difference from the full social contacts they previously enjoyed than are those who suffer the handicap early in childhood (39).

Other writers stress the special problems of childhood adjustment to loss of hearing. The far reaching educational and social effects of a severe impairment before natural language is acquired are generally recognized. The tyranny of children in ridiculing those who are different has been pointed out (17, 49). During adolescence, when new social and economic responsibilities are expected of a person, loss of hearing with its concomitant feelings of despair and inadequacy makes the shift from childhood to adulthood very trying.

Duration of hearing loss. This variable is of course related to the preceding one but examining it independently is justified, for its psychological significance may be of a different character.

In two studies duration of impaired hearing has been correlated with Neurotic-tendency scores on the Bernreuter Inventory (67, 93). In the case of Pintner's rural adults no correlation was found; in Welles' urban adults, however, there was a slight negative correlation ($r = -.15 \pm .047$). This relationship is curvilinear, however, and the *eta* correlation coefficient is .33.

Introspective reports reveal that there is frequently a change in the person's psychological field over time. It is often reported that the first awareness of loss of hearing gives rise to confusion, despair, and resentment (66). Gradually some individuals are able to accept their disability and thereafter exhibit more constructive adjustments. Such a change in reaction would be in accord with the results of Welles' study.

Chronological age. Age has been correlated with measures of adjustment in a number of investigations. No special rationale is given for this procedure other than the general expectation that in some way adjustment should be influenced by age. In none of the studies has the influence of such concomitant variables as age at loss of hearing and duration of handicap been ruled out. The data are summarized in Research Summary XIII, pp. 224–225. On the basis of the evidence we are forced to conclude that no consistent relation has been found between chronological age and adjustment to impaired hearing. Such a relation is hardly to be expected for the reasons that applied in the case of age at loss of hearing.

Intelligence. Data on the relationship between intelligence and adjustment of persons with impaired hearing are found in several studies, which are summarized in Research Summary XIV, pp. 225–226. Most of these studies show no relationship, or a low positive correlation, between intelligence and good adjustment. Similar results have been found for subjects with normal hearing. On certain theoretical grounds, an interdependence between intelligence and adjustment is expected:

1. If the emotional tension which accompanies maladjustment leads to cognitive disorganization, it would follow that the poorly adjusted should be able to handle intelligence test problems less adequately. There is a mounting volume of experimental evidence in support of this expectation. Two studies have shown that under conditions of severe frustration, the constructiveness of the play of young children decreases. Barker, Dembo and Lewin found that this decrease was equivalent to 17.3 months in mental age for subjects who averaged 45.2 months in age (5). It was observed that in some cases a background of weak frustration increased the constructiveness of play. Wright found a statistically significant negative correlation between level of constructiveness and strength of frustration, $r = -.30$ (98).

2. It is likely that intelligence affects the ability to structure behavior possibilities, i.e., to perceive what can and cannot be done, and awareness of behavior possibilities is of tremendous significance for adjustment. We shall return to this problem in a later discussion.

Means of communication. All the characteristics generally attributed to the deaf and the hard of hearing have probably been explained at some time in terms of inefficiency in speaking and in understanding the spoken word. For example, the inattention (36) and the social isolation (11) of persons with impaired hearing have been directly related to their inability to communicate by speech. Schools for the deaf have been frequently criticized in the past for giving too little attention to the teaching of conversation. Today, the trend is very much in the other direction. Pintner comments that "not until we possess adequate measures of speech and lip reading will we be able to measure the efficiency of the education of the deaf, for upon these two accomplishments most of the energy of teachers of the deaf is now directed" (68). Programs for military personnel with impaired hearing in Army and Navy hospitals center around hearing aids, instruction in the use of residual hearing, lip reading, and corrective speech (22).

While accepting the importance of speech and lip reading, some modern educators and scientific investigators have raised pertinent questions regarding the extent to which this form of language should be taught. It is pointed out that for some children who have lost their hearing before learning to speak, speech training and lip reading is so difficult that serious personality difficulties and limitations in acquiring general information ensue if mastery of oral communication is required. "If a child cannot learn to read lips well, or cannot speak well, far better let him develop other modes of expression and communication, writing and gesturing, then make him feel ashamed and frustrated because he cannot acquire the very difficult art of speech and lip reading" (73). It is also suggested that the deaf child would be likely to achieve a broader experience with the reality about him if his "natural" language of signs were encouraged during his early years so that he could be led to "tell about and share his experiences in his own language, before being taught a more difficult means of communication" (73). The complexity of the issues involved in the problems of speech training is seen in the question, "What happens to the personality of the deaf adolescent when he finds, as he may, that the speech he has so laboriously acquired at school is unintelligible to almost all strangers and practically useless in his vocational contacts?"

Such questions as these touch the heart of the practical problems, and emphasize the need for scientific aid in their solution. A few experimental studies deal with the gross relationship between speech and lip reading ability and personality and adjustment. These are summarized in Research Summary XV, pp. 226–227. Because of experimental inadequacies pointed out there, no conclusions can be drawn regarding methods of communication. The three studies of the relationship between hours of lip reading instruction and adjustment consistently show that there is no relationship (34, 67, 93). Efficiency of lip reading was not considered, apparently because of the difficulty in measuring it. In Habbe's study, however, there are suggestions that a positive attitude toward lip reading instruction is more characteristic of the better adjusted individuals. Six of seven boys from the best adjusted group approved instruction in lip reading while only two of seven boys from the poorest adjusted group did so (34).

Though few positive findings appear in these studies, they indicate the direction which future investigation should take. Particularly needed are studies eliminating as far as possible all variables except training in communication. Use of carefully equated control groups would appear to be essential.

Type of school. Along with the emphasis on training in oral communication as a means of facilitating normal social contacts, there has developed the policy of allowing hard-of-hearing children to remain in regular public schools insofar as this is feasible. The main reasoning, aside from the consideration of financial economy, is that the child with impaired hearing will live largely in the society of normal persons, subject to the same standards, values and practices, and that consequently his formative school years should be spent in the same environment. It has also been pointed out that children with normal hearing can only learn to accept the child with impaired hearing by associating with him.

To make it easier for hard-of-hearing children to attend regular public schools, certain arrangements are frequently provided, viz., favorable seats in regular classes, lip reading instruction, hearing aids, special tutorial services, and special classes. It is generally recognized that children with very severe impairment of hearing (loss of more than 60 decibels in the better ear) may need to be placed in special day or residential schools (56). However, experience is proving that factors other than loss of hearing must be considered in deciding whether a particular child should attend a regular public school. Some of these are: age at loss of hearing, intelligence, socio-economic status, personality (56, 64, 84). With respect to the latter, the general feeling is that "a maladjusted and emotionally unstable acoustically handicapped child will have greater difficulty succeeding in a normal program than one who is well adjusted, and may need the benefit of the reduced tempo and individualized instruction of a special program." (56).

Paralleling the controversy between regular versus special schools is the issue of day versus residential schools. Those who oppose residential schools claim that they tend to "institutionalize" the child, weaken home ties, and limit normal contacts. A dependent individual imbued with feelings of being a "class apart" is said to be the result (37). On the other hand, it is held that the deaf child is better supervised in a residential school: outside of school hours he is under the care of trained people rather than parents who usually have little understanding of his problems.

Little concrete evidence is advanced in support of these viewpoints. Burchard and Myklebust studied the social competence of children in a residential and in a day school for the deaf (13). The groups were comparable in degree of hearing loss and intelligence. The residential school children showed a retardation in social maturity of from 15 to 20 points, whereas the day school children showed no retardation.

A few studies indirectly throw light on the problem by indicating the relationship between behavior and length of stay in a residential school. Burchard and Myklebust (13) found that children living in the school less than four years tended to receive higher scores in social maturity than those with more than four years residence, earning Social Quotients of 86.9 and 81.2, respectively (C.R. = 2.3). They also found that congenitally deaf subjects with less than four years residence tended to receive lower behavior problem ratings than those with more than four years residence, but this was not true of children who lost their hearing after language had been established.

Observations of the spontaneous behavior and feelings of persons with impaired hearing especially need to be taken into account. Naffin reports that in a German school for the deaf, the day school pupils preferred to play with the residential group rather than with children with normal hearing outside the school (63). This does not imply that such spontaneous groupings are necessarily best for the children; but it does suggest that they feel more secure when they are with others similarly handicapped. A study of adults has also shown that persons with marked hearing losses in general feel less at ease when with companions having normal hearing (74).

Certainly, more critical evaluation of the conditions which lead to preference for different social groupings is called for. It is now rather generally believed that handicapped individuals need the company of other handicapped people in order to feel that they are not unique and have a part to play in the world. It is also widely believed that handicapped persons need to associate with the nonhandicapped. Some special advantages of being with nondeaf persons as seen by those with impaired hearing have been discussed (cf. p. 187). It has been reported by handicapped persons that they may derive particular pleasure from the characteristics of others which are denied to themselves. One young man who lost his sight and all but 30% of his hearing in one ear at age 7 writes, "Curiously enough, I believe that I enjoy the human voice more, perhaps, than normal people do" (55). A young woman who suffered severe crippling from infantile paralysis at the age of 3 expresses great appreciation of grace and form, and a particular dislike for the ugly and distorted (100). Whether this type of reaction means that the individual derives substitute satisfactions, that he avoids identification with the handicapped group, or expresses the increased attractiveness of goals difficult to attain (96) can only be determined from a deeper analysis of the psychological world of the individual.

The growing recognition that deaf and hard-of-hearing children should have the companionship of both children with normal hearing and those handicapped like themselves may be seen in the trend from residential to day schools so that the pupils can at least live in their own homes. In the decade 1933–43, the enrollment in residential schools decreased 7% whereas that in day schools increased 13% (57). Also, there is an increasing tendency to encourage deaf pupils to attend high schools with the unhandicapped (90). It would seem that special precautions should be taken to see that the child with impaired hearing in regular school has the companionship of similarly handicapped children.

There is great need for further clarification of the issues involved and for research upon social factors in the education of children with impaired hearing. Such research should have the guidance of a philosophy of education if the findings are to be evaluated. If, for example, we believe that the aim of education for the deaf child should be to make him as much like a nondeaf person as possible, we will applaud the efforts in Helen Heckman's behalf (38). She lost her hearing at the age of 11 months, and achieved so great a mastery of speech and lip reading that she often passed for a person with normal hearing. Her exaggerated dependence upon the opinions of others and her tension in meeting normal standards of behavior would be ignored in this evaluation. If, however, we uphold the point of view that "the aim of the education of the deaf should be to make him a well-integrated happy deaf individual and not a pale imitation of a hearing person" (73), then our evaluation will be entirely different. Probably research will show that the residential school, the day school, and the regular public school are each superior in meeting the emotional and educational needs of different groups of children. The task of research is to formulate principles so that educators can place children properly before they languish in unfavorable school environments.

Deaf relatives. Familial deafness is of importance in the study of heredity, and in the study of the social psychology of deafness. Two investigations have examined the relationship between adjustment and number of deaf relatives. Pintner and Brunschwig gave the Brunschwig Personality Test for Deaf Children to 1,263 children in schools for the deaf (71). The poorest adjustment scores were made by children from families having no other deaf members, and the best scores were made by children from families containing deaf adults. Children from families where there were deaf siblings but parents with normal hearing made intermediate scores. The differences were very slight for girls but more decisive for boys. O'Connor and Simon analyzed some factors which might be related to the adjustment of pupils in a school for the deaf (65).

While 53% of the 130 congenitally deaf children had deaf relatives, only 30% of 49 who were severely maladjusted had deaf relatives. These studies suggest that the presence of other deaf members in the family is an advantage for the deaf child. It may be that this provides the child with understanding and a feeling of group membership which are essential to emotional adjustment.

Other physical impairments. Do other physical impairments in addition to hearing defects make adjustment more difficult? There is evidence that the presence of head-noises (tinnitus) leads to greater emotionality or nervousness. Both Welles (93) and Pintner (67) used the neurotic tendency scale of the Bernreuter Inventory in comparing subjects who were suffering from tinnitus with those who were not. Welles found that his 128 adults with tinnitus scored 30 points higher on the neurotic-tendency scale than the 64 adults who did not suffer from tinnitus, a difference approaching statistical significance (C.R. = 2.3). Pintner's findings are similar. These results are in line with subjective reports that the head noises are especially hard to hear. "He who has them rarely, if ever, knows a moment of silence, and the torture they inflict can never be estimated by anyone who has never experienced them. Head-noises alone would provide excuse for most of the mental aberrations of acquired deafness" (66).

Two studies have compared physical factors in groups of better and more poorly adjusted children with impaired hearing. O'Connor and Simon's 49 problem children did not show a greater frequency of physical defects than the 206 members of the general school population, but a greater proportion of the problem group tended to be left-handed (15% and 6%, respectively). In Habbe's study (34) it was found that 4 of the 10 most poorly adjusted boys suffered speech disorders whereas none from the best adjusted group did. In this case, it is difficult to say whether the speech disorders were an expression of or a contribution to the maladjustment.

Summary. 1. Adjustment scores have not been found to be correlated with degree or duration of hearing loss, with age at its onset, chronological age, or hours of lip reading instruction.

2. Good adjustment tends to be associated with intelligence and with the presence of other deaf members in the family.

3. Poor adjustment is associated with head noises (tinnitus).

4. Studies of the influence of means of communication and type of school are too inadequate for even tentative conclusions.

The Legal and Economic Position of Persons with Impaired Hearing

The preceding section has been devoted to a review of experimental findings concerning the personality and adjustment of persons with impaired hearing. Before an attempt can be made to integrate and understand these findings, a fuller picture of the general status of the deaf and the hard of hearing is needed. The data on the attitudes of persons with normal and impaired hearing toward each other suggest that the latter feel that they are in the position of a minority group. Their legal position and economic condition are especially significant for feelings of group status.

Legal Position

Statutory enactments in regard to the deaf mainly concern the instruction of deaf children. In most states the education of the deaf is in the hands of the state department of education. The provisions are practically the same as for children generally (8), although teachers in residential schools for the deaf, on the whole, are paid lower salaries than public school teachers in the same communities (9).

Other legislation is relatively meager. Some enactments, though aimed at the protection of the deaf, are subtly invidious in assuming that the deaf are mentally incapable, emotionally unstable, and not able to manage for themselves. For example, in Alabama, the deaf together with the blind are exempted from the property tax up to $2,000 (8). In Georgia, guardians may be appointed specifically for the deaf as well as for certain other classes if it appears that they are "unable to manage their estates" (8). Depreciation of the deaf is also seen when they are grouped with other classes of "inferior" status. The Georgia code, for example, specifies that persons who are lunatics, idiots, blind, or "deaf-mutes" are to be "dealt with according to the laws relating to the incompetent" (8).

Some legislation takes into account the objective situation and needs of the deaf and accordingly acts to their advantage. Thus, in some states, marriages of the deaf are facilitated by granting officials of schools for the deaf, who are likely to be acquainted with the sign language, authority to perform marriages (8). Special measures providing for the use of qualified interpreters by the deaf during legal proceedings have also been enacted. Recently, a very important movement for vocational training of persons with impaired hearing has been given attention in legislation (cf. discussion of Vocational Rehabilitation, Chapter VII.).

The general trend shows that statutes dealing with the deaf as a particular class in society are rapidly disappearing, except for legislation concerned with their vocational education (8). Nonetheless, in actual practice the old attitudes still persist. Such prejudice is often encountered in the courts, particularly in cases of traffic accidents when it is assumed that if the defendant had normal hearing, the accident would not have occurred (33). Only 1% of all traffic accidents involve persons who are physically handicapped, of whom an infinitesimal proportion is deaf, and yet revocation of a driver's license for traffic violation is relatively frequent among the deaf (33). Another discriminatory practice is the presumption that a deaf defendant is of unsound mind unless the prosecution proves otherwise. That such attitudes color the special treatment of the deaf is understandable when one considers that systematic education for the deaf did not begin until well into the 19th century, and that only recently have they begun to be accepted as full members of society (31).

Economic Condition

It is extremely difficult to determine the relative economic position of persons with impaired and normal hearing for the nation as a whole. The most complete study of the occupational status of the deaf and hard of hearing was made by the U. S. Office of Education in 1934 (54); 19,580 persons with impaired hearing 16 years of age and over were interviewed in 27 states and the District of Columbia. Of these, 56% claimed to hear loud speech, at least with an earphone, and so would be classed as hard of hearing. All persons included in the study had been employed at some time, and 61% of the deaf men and 51% of the deaf women were employed at the time of the interview; for the hard of hearing these proportions were 51% and 48%, respectively. Comparable data on employment of the general population in 1934 are not available, but at that time 57% of the steel workers and 63% of the railroad workers were employed. In a study made in Indianapolis in 1936, 24% of a sample of 70 deaf married women and 18% of all married women in the city were employed (42). This limited information suggests that in the past the extent of employment among the deaf and hard of hearing has not differed greatly from that in the general population.

The relative standing of persons with impaired and normal hearing with respect to income and occupational level is also difficult to determine. In the 1934 survey, the median wage of the employed in the group with impaired hearing was $18 a week. The deaf tended to earn less than the hard of hearing: 57% of the deaf men averaged less than

$20 weekly in contrast to 45% of the hard-of-hearing men. Approximately 40% of the men and 50% of the women in the group with impaired hearing were engaged in unskilled or semiskilled work. Concentration at these levels was greater among the deaf than among the hard of hearing, and also greater among those deaf from birth or an early age than among those who became deaf in adulthood. Comparable data for persons with normal hearing are not available. However, one study of deaf families in Indianapolis showed that in 1936, 79% of deaf families paid rent below $20 per month whereas only 27.5% of all families in that city paid rent within this bracket (43). Similarly, only 20% of the deaf families owned their own homes in contrast to 41.6% of the other families. The author of the study attributes the deaf families' low rent and infrequent home ownership to their low income.

Employer attitudes are an important factor affecting the occupational status of the deaf and the hard of hearing. (This general problem is discussed in Chapter VII.) In the 1934 survey, approximately 85% of the deaf and 85% of the hard of hearing were reported by their employers as succeeding fairly well or very well (54). Only 30%, however, were declared to have any chance of promotion. Degree of hearing loss was not an important factor in this judgment, so it is not clear to what extent hearing disability plays a role in limiting opportunities for advancement. Comparable data for the general population are needed. Most of the spontaneous comments of the employers in the 1934 survey mentioned semiskilled and unskilled jobs as most suitable for persons with severe hearing losses, a generalization which militates against advancement.

To improve the economic situation of persons with impaired hearing, leaders in the field suggest that the traditional "trade-training" program in the schools be replaced by a broader program in which general industrial principles will be learned, proper work habits developed, and harmonious relationships with others emphasized (1, 78). The student will thereby be prepared, it is said, for greater versatility and adaptability which are so important in a changing economy. Many studies show that large numbers of students from schools for the deaf do not enter the occupations for which they were trained (42, 51, 54, 105). This fact in itself is not an indictment of the schools since many extraneous factors may cause such changes. However, it is widely recognized that vocational training in schools for the deaf could be improved by more adequate vocational guidance and greater knowledge of the demands of the industrial world.

Adult vocational training is needed for persons who lose their hearing later in life, and to meet changing economic demands. According to estimates of the Vocational Rehabilitation Division of the U. S. Office of Education, persons vocationally handicapped by hearing difficulties comprise approximately 15% of the annual increment of new cases eligible for rehabilitation service (87). Although in the early 1930's only 3% of all persons rehabilitated under this program were handicapped by deficient hearing, the percentage rose gradually until in 1939 about 9% of the rehabilitated cases had impaired hearing (87).

Employment is recognized by the deaf and hard of hearing as one of their chief problems. In one study of about 80 former pupils of schools for the deaf, employment was the most frequent problem spontaneously mentioned (39). Most of the subjects felt that the chief difficulty was employer prejudice against the deaf. Others emphasized the legal status of the deaf worker under the compensation laws. Yet, the deaf and the hard of hearing as a group by no means hold up their disability as the primary cause of their employment difficulties. Of the nearly 9,000 unemployed persons with some hearing difficulty who were interviewed in the 1934 study, 62% attributed their unemployment to the depression, and only 16% felt that their hearing defect was the main cause (54).

As for the future, Mr. Schowe, the chairman of the Industrial Committee of the National Association of the Deaf, predicts that "for the deaf who qualify, there will be a better understanding in industry and a wider range of opportunity than ever before. For those who cannot measure up to employment standards which have been advanced to a new high level, there will be nothing much in sight except pauperism and, perhaps, pensions or the sheltered workshop. The borderline cases, the marginal workers, will tend to disappear" (79). This is probably equally true for workers with normal hearing.

The Somatopsychological Situation of Persons with Impaired Hearing

As we have seen, the results of investigations of the effects of impaired hearing on personality and adjustment are not as enlightening as we might have hoped. Many of the findings are inconsistent, and those that are well established give little insight into how impaired hearing affects behavior. Important sources of difficulty lie in inadequacies in the design and techniques of some of the experiments, and in the lack of systematic concepts to guide the research and give meaning to the data. In this section we shall attempt an analysis of the somatopsychological effects of impaired hearing in terms of the concepts which have proven useful with other physical impairments.

Overlapping Situations

The basic situation of the person with impaired hearing seems to be that he is, to an unusual degree, subject to the behavioral determiners of both a normal and a physically defective person; i.e., he is continually in an overlapping situation because his impairment is largely experienced in relation to the social behavior of others, yet is not easily perceived by others, and then only by behavioral signs.[15]

In some cases the behavior resulting from the two sets of determiners in the overlapping region will be congruent. For example, the behavior of a person with impaired hearing who needs to concentrate on an exacting task (normal determiners) in a noisy situation may even be facilitated by absence of noise (deaf determiners). In some cases, the behavior required by one situation may be modified by the determiners of the other. A deaf person who reads lips (deaf determiners) will participate in a conversation (normal determiners) in a manner quite

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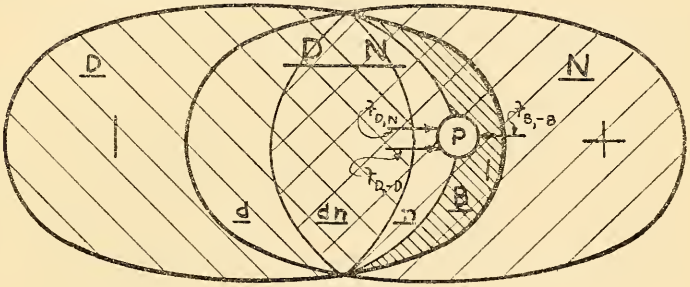
[15] The fundamental structural situation of the completely deaf person we conceive to be as presented in the following figure. The dynamics of the situation vary from person to person; that represented appears to be of common occurrence.



Situation of the Deaf

D = Situation of person with impaired hearing (negative valence)
N = Situation of person with normal hearing (positive valence)
DN = Overlapping situation common to persons with normal and impaired hearing (neutral valence)
B = Barrier region (negative valence)
  d = subregion of DN where deaf person's situation is identical with normal person's situation
  n = subregion of DN where normal person's situation is identical with deaf person's situation
  dn = subregion of DN where the situations of the deaf person and the normal person are interfering or antagonistic
  $f_{D,N}$ = force in D toward N
  $f_{D,-D}$ = force in D away from D
  $f_{B,-B}$ = force in B away from B
P = Person

different from a normal person's conversational behavior. In still other cases, the overlapping situations may require mutually exclusive behaviors: a deaf woman cannot sew and converse with her friend simultaneously.

Indefiniteness of Barriers

Another fundamental characteristic of the psychological situation of persons with impaired hearing is that there is no clear differentiation between the things they can do and the things clearly beyond their reach. This has been particularly stressed in the Heiders' analysis of the psychological situation of the deaf (39).

Within the crucial barrier regions, indefiniteness is equivalent to new psychological situations and the behavior which has been predicted for them should occur here, too (cf. Chapter II). Behavior will not be parsimonious, but exploratory and random; it will be careful and cautious, and also radical and extreme; it will be vacillating, unstable, and easily influenced; frustration will be frequent. It would seem that repeated exposure to situations characterized by unclear barriers would not be conducive to the development of an integrated personality.

Indefinite barriers are a consequence of several factors which affect the psychological situation of the person with impaired hearing.

Misunderstanding on the part of others as to the behavior possibilities of the person with impaired hearing. There are no obvious physical signs which reveal the state of a person's hearing, so that frequently a person with impaired hearing is taken for "normal". He is expected to know the details of plans being discussed, and to act intelligently in situations where verbal cues are essential. The person with impaired hearing can never be sure what behavior is expected of him. Because recognition of one's hearing difficulty by others is so necessary in order to avoid situations which do not take it into account, some persons wear a hearing aid even when auditory acuity is not improved thereby. It is also widely recommended that the handicapped person freely admit his hearing impairment rather than attempt to pass as having normal hearing.

It seems that many persons with normal hearing do not appreciate the psychological significance of deafness and therefore make little effort to help the person with impaired hearing define the behavior possibilities confronting him. "While the blind are taken voluntarily and led whither they would go, the deaf are replied to with few and hasty words, and in tones that betray petulance" (44). In this connection, Montague (62) and Hood (41) give some well considered advice to the nondeaf. They write: "I wish they [persons with normal hearing] would not expect me to know clairvoyantly the details of plans and expeditions in which I am to have a part." "I wish they would not indulge in their penchant for candlelight when inviting me to dine." "I wish they would not sit in a rocking chair."

Difficulties in evaluation of behavior possibilities. The person with impaired hearing frequently finds it difficult to judge what situations will be within his command. His success at reading lips varies with the speaker; he can manage more easily with one person than with a group; lighting is important. Many such conditions cannot be known until the individual enters the situation, which means that he is frequently uncertain as to whether he will be able to behave adequately.

Difficulty of accepting objective limitations. If a person cannot accept the fact that he has a hearing difficulty, he will strive to identify himself with those having normal hearing by attempting to act in accordance with their standards of behavior. The activities in which he cannot engage successfully will remain unclear or will not be admitted. Habbe found that his well adjusted hard-of-hearing boys tended to welcome remedial instruction for their hearing disability, in contrast with his poorly adjusted boys who tended to reject such instruction (34). Any factors favoring acceptance of objective limitations facilitate clarification of barriers, and thus probably help toward good adjustment. Group identifications are particularly important in this respect. Whether or not a person can accept his limitations will depend upon many factors, some of the more common of which are:

1. *Degree of hearing loss.* A number of considerations suggest that the delimitation of behavior possibilities is easier for the deaf than for the hard of hearing. First, the auditory incapacity of a deaf person is so clear that his wishes cannot readily affect his perception of it. Many authors have pointed out that the hard of hearing are easy prey for quacks who hold forth promises of eventual recovery (17, 21). It has also been reported that after treatments have been started, a person who is hard of hearing may actually hear better, his increased motivation making him more alert and attentive (21). Secondly, the hard of hearing are more readily mistaken for persons with normal hearing in many situations. Quality of voice is less frequently a sign of their handicap, and, generally, the hard of hearing more easily master lip reading so that they can get along with fewer obvious modifications in behavior. These considerations encourage identification with those having normal hearing, and failure to recognize the barriers to normal behavior which may

actually exist. In spite of the greater objective limitations of the deaf, therefore, one important factor in adjustment, namely, sharpness of barriers, is in their favor. This may be one reason why the studies show no correlation between adjustment and degree of hearing loss.

2. *Age at loss of hearing.* Other things being equal, clearness of barriers as a factor in adjustment would seem to favor the individual who suffers his hearing loss at a young age before he has formed strong identifications with the normal group. The experimental studies show no statistical correlation between age at loss of hearing and adjustment. It is likely that other factors, such as language development, counteract and outweigh the influence of sharpness of barriers.

3. *Duration of hearing loss.* Insofar as evaluation of one's behavior possibilities is in part a learning process, we should expect that what one could and could not do would be unclear at the onset of impaired hearing, and would become more sharply defined through experience. Introspective reports tend to show some association between duration of hearing loss and adjustment.

4. *Having deaf relatives.* Other deaf members in the family may help to clarify behavior possibilities by indicating some of the sources of success and failure. Since they provide opportunity for association with others similarly handicapped, the individual with deaf relatives may accept his objective limitations more readily. Such acceptance is conducive to clarification of barriers. The experimental studies tend to support the proposition that other deaf members in the family can make positive contributions to the adjustment of the individual.

5. *Progressiveness of deafness.* The condition of progressive deafness would seem to create special problems in evaluating behavior possibilities (7), because the line of demarcation between what can and cannot be done changes constantly. In many such cases, uncertain prognosis militates against acceptance of limitations on behavior. No experimental studies have compared persons with a static hearing loss with those whose condition is progressive.

6. *Education in segregated or nonsegregated schools.* Special schools for children with impaired hearing appear to facilitate a clear appreciation of behavior possibilities within the school environment, through identification with others similarly handicapped, special instruction in meeting situations within the institution, and elimination of common difficult situations. The main question refers to whether such clarity continues for the pupil when he leaves school. It would seem that a wide variety of experiences in the world of those with normal hearing is also necessary.

The extent to which special schools can provide this, whether home visits are sufficient, and the optimal extent of such experiences, all need careful investigation.

7. *Intelligence.* Correct estimation of one's behavior possibilities requires knowledge of one's physical, intellectual, and social abilities, sensitivity to the attitudes and expectations of others and estimation of the demands of anticipated situations. Hence, high intelligence would appear to be advantageous. The experimental studies tend to show a weak positive correlation between intelligence and personality adjustment.

Unfortunately, the investigations reported to date do not touch the heart of the problems discussed here. It is obvious, as has been pointed out, that paper and pencil tests of the inventory type cannot reveal behavior in its somatopsychological setting. Studies including detailed descriptions of the behavior of persons with impaired hearing in concrete situations as well as deep personality analysis are required.

Social Significance of Barriers

The barriers to free locomotion of persons with impaired hearing are most frequently experienced as social rather than as physical restraints. The deaf subjects of the Heiders' study (39) mention the following activities as being denied them: enjoying conversation, keeping in touch with the life of other people, enjoying membership in large social groups, communicating exact detailed information. Sound in its nonsocial functions, e.g., beauty of melody, was also mentioned as a great loss by Heiders' subjects, as it has been by others (3, 44). But sound is referred to most repeatedly as a means of communication. Beethoven's violent reaction to his deafness reflects the social nature of the barrier in his case. He writes: "For me there can be no recreation in human intercourse, no conversation, no exchange of thoughts with my fellow-man. In solitary exile I am compelled to live" (80). It is true that some persons with hearing difficulties feel that social intercourse is relatively unimportant. For example, Carolyn Wells, the novelist, advises:

> Never regret that you are deaf. People's gray matter gives out long before their voices do. Deafness is a blessing and saves you from being bored by senseless chatter (94).

Nonetheless, the problems of adjustment of persons with impaired hearing derive largely from the social nature of the barriers which confront them. A deaf person may directly overcome this barrier to some extent by mastering lip reading or wearing a hearing aid; he may minimize the importance of activities requiring passage through these social barriers; he may turn his attention to other activities which can provide some of the satisfactions denied him. Or he may struggle through the social barriers and suffer more or less adverse effects.

Commonality of Behavior Possibilities with Normal Persons

In writings about the deaf greatest stress is placed upon the behavior denied them by their disability, but in comparison with other serious disabilities, deafness is relatively benign in this respect. For example, the Civil Service Commission's study of vocational opportunities for the physically handicapped found that more jobs could be satisfactorily filled by the deaf than by any other serious disability classification (104).

The person who is deaf or hard of hearing but can communicate by speech and lip reading has more behavior possibilities in common with persons with normal hearing than has the deaf person who must communicate by signs or writing. All other things being equal, the greater the commonality of the overlapping situations, the fewer the frustrations and probably, therefore, the easier the adjustment. We have seen, however, that all other things are not likely to be equal. For example, the barrier between accessible and inaccessible activities is likely to be less definite for the hard of hearing than for the deaf. This may explain in part why studies comparing these two groups, or studies of the effects of lip reading instruction, do not show expected differences. It seems probable that efforts to improve the use of auditory capacity and to teach speech and lip reading can only be successful from the mental hygiene point of view when efforts to clarify behavior possibilities are also made.

Relative Potency of Normal and Handicapped Behavior Determiners

The relative potency (weight or importance, cf. p. 35) of the two sets of determiners in the life of a person with impaired hearing is a significant factor in his adjustment. If the pressures for normal behavior are great, the frustration and conflicts are bound to be great, too. The relative potency of the normal and handicapped situations for an individual is probably largely dependent upon the pressures, expectations, and demands of the immediate family and other groups. Undoubtedly, one of the most difficult problems for all disabled persons is to accept realistically the limitations of their situation without a "giving-up" or loss of ambition. A number of suggestions have been offered for aiding the person with impaired hearing in achieving this:

Open recognition by family and friends of the unnormality and limitations of the person with impaired hearing. This tends to reduce the weight or importance of normal behavior. A girl crippled at the age of 3 writes, "What set me on the wrong path was her [my mother's] insistence that I was 'normal'. Because, after all, I wasn't" (100). When she ceased struggling to behave and to be treated as a "normal" person she "felt a wonderful relief."

Emphasis on accessible activities. The relative potency of the handicapped situation may be increased for the person with impaired hearing by emphasizing the significance and variety of accessible activities. Calkins, a deaf advertising man, writes:

> Some have said . . . that when God closes one window, He opens another a little wider. I have tried to help Him swing my window altogether open. . . . Thus I find myself at fifty-four busy and happy . . . with a life packed full of the most exciting and enthralling things to do, and wondering whether I am going to have time. . . . to do them all (16).

Emphasis on assets of deafness and disadvantages of hearing. A number of authors have pointed out the advantages which may come with deafness (7, 17, 18, 27, 99). They have said, for example, that deafness decreases distractions, fosters constructive thought, and increases the interpretive capacity of other senses. Calkins goes so far as to say, "Given a work, a worthwhile work, that can be done without hearing, and the deaf man has an advantage that is incalculable" (18). Emphasis on such positive features acts to increase the potency of accessible regions in the situation of the person with impaired hearing.

Recognition of possible disadvantages of hearing acts in a similar manner. Edison is reported to have declined the use of a hearing aid with the statement: "Too busy. A lot of time is wasted in listening. If I had one of those things my wife would want to talk to me all the time" (17). Calkins mentions disagreeable sounds which persons with normal hearing have to endure.

Achievements of the deaf and the hard of hearing. Accounts of achievements of persons with impaired hearing, many of which appear in the journals of the deaf and hard of hearing, serve to enhance their position. One person who suffered a hearing loss later in life tells how he looks to the lives of famous deaf persons for help in accepting his own handicap:

> I have read about the deafness of Mozart, Beethoven, Bruckner, Sir Joshua Reynolds, Lord Chesterfield, George Washington and Theo-

> dore Roosevelt. They surpassed their fellowmen in spite of their handicap. I like to tell myself that their defect had a great deal to do with their fame, that if a man is able to overcome his handicaps he is twice as great. I resolve that I will make a better adjustment, that I say to the world at large, 'I am deaf, please speak louder' (19).

Interchange between groups with normal and impaired hearing. It has been pointed out in arguments against segregated schools that the child with normal hearing should have the companionship of handicapped children in order to appreciate and respect their situation. A positive attitude on the part of the normal majority is likely to increase the potency of the situation of the handicapped person.

Philosophy of life. Development of a philosophy of life which will enable the person with impaired hearing to survey his field objectively has been frequently urged (39). Essentially, such a philosophy of life holds that hearing is only a means, and that the ends which are important to the individual may be attained in spite of impaired hearing. Menninger refers to such philosophizing as a form of intellectual compensation which leaves the sufferer cold (59). When such advice is merely expressed and does not alter the way a person with impaired hearing sees the situation, this is certainly true. When, however, emphasis on the important values and ends held by the person has the effect of minimizing the potency of the normal determiners and inaccessible activities, he will be better able to view his situation objectively. It is likely that the development of an effective philosophy of life depends on one's feelings of security and the extent to which the ideology is felt as an imposition from outside.

Relative Valence of Accessible and Inaccessible Activities

Experiments have shown that the valence or attractiveness of regions may be augmented by inaccessibility (97). Adages such as "the grass on the other side of the fence is greener" reflect this psychological fact. We should expect, therefore, that those activities which can be undertaken by the deaf person only with difficulty would tend to have special attraction for him. Examples of this are found in spontaneous comments of deaf persons. One man who lost almost all his hearing feels that he enjoys the human voice more than most people do (55). A man who became progressively deaf writes that the deaf man wants the ordinary social cheer, the free and hearty greeting of neighbors; because it is so much harder to win and hold, he is likely to prize it more (44).

Such enhancement of attractiveness may serve as a positive factor in overcoming obstacles, but when activities are completely unattainable, it feeds failure and frustration. It is, therefore, important to ascertain ways by which the attractiveness of unattainable activities can be changed. This may be accomplished by altering the needs of the person through psychotherapy and the development of a new philosophy of life so that unattainable activities no longer seem satisfying, or by providing substitute activities.

Egocentricity

This characteristic refers to the extent to which a person's perception of the world is dependent upon his own needs. With a high degree of egocentricity, a person's evaluation of the behavior of others is seen largely in terms of their effects on himself. Such a person is relatively unable to appreciate the needs of others; and behavior dependent upon this appreciation, such as cooperativeness, empathy and generosity, will be infrequent. Intolerance, tactlessness, and cruelty will be more characteristic.

Egocentric behavior has been said to be more typical of the person with impaired hearing than of the person with normal hearing though none of the experimental studies has specifically treated this question. Some of the incidental data, however, suggest that the child with a serious auditory impairment, who lives in a restricted environment, tends to become egocentric in outlook. Brunschwig found that more children with normal hearing than "deaf" children report that they like animals very well, that they always like to help other children, and that they always like to help their teachers (12). Insofar as helping and liking others reflect appreciation of the needs of others and sympathy with them, these results are relevant to the question of egocentricity. A psychocological analysis of some of the circumstances in the life of a person with impaired hearing clarifies the reasons why he may easily develop an egocentric outlook.

New situations. We have already seen that the person with impaired hearing is frequently placed in new situations, in which the directions are unknown. The unstructured character of such situations is likely to be felt as threatening to some degree, and potential danger frequently has the effect of focusing attention on the self with the result that egocentric behavior is stimulated.

Auditory sense. It has been suggested that the deaf person is prone to egocentricity because he cannot hear, the assumption being that hearing is important in appreciating the needs of others and in experiencing empathy. In this regard, Hirsch writes:

> There is abundant proof that sympathy is most forcibly aroused in man through the sense of hearing; . . . consequently [deaf-mutes] are

> just inclined to the direct opposite of sympathetic feeling, and to cruelty—more especially cruelty to animals (40).

Margaret Baldwin believes that sound, more than any other stimulus, is able to excite the emotions. In support of her contention she offers the following examples:

> A scientific writer points out that we can see with indifference the writhings of a suffering animal that is still, but that, if there are cries of pain, it produces emotion at once.
>
> In reports of terrible marine disasters, it is almost never said by people that they can never forget the sights they saw, but always that they can never forget the cries of the drowning (3).

We have found no systematic scientific study of this suggestion, but it appears worthy of investigation.

Social isolation. The egocentricity of persons with impaired hearing has been attributed also, to the fact that they frequently live in isolated, protective environments, only partially aware of many of the immediate social events in the outside world. To the extent that this is true, it is difficult to awaken their interest in others and in events not connected with the self. Pope stresses this factor:

> On account of their handicaps and limitations, the deaf live in a very small and restricted world. Their outlook on life is so limited that they are likely to acquire a provincial attitude, becoming somewhat intolerant and self-centered (76).

Experience of illness. Impaired hearing frequently results from childhood illness, during which the attention of others and the patient's fear tend to make him the center of the world; this is another circumstance favoring the development of egocentricity.

Educational deficiency. Finally, the egocentricity of the deaf has been attributed to educational limitations.

We do not wish to suggest that the opposite of egocentricity is the optimum behavior either from the point of view of social value or mental health of the individual. However when the individual is so egocentric that he analyzes his behavior and that of others exclusively in terms of their effects on himself, he is also likely to be suspicious, sensitive, fearful, tactless, unsympathetic, etc. On that basis the following suggestions for decreasing egocentricity may be made:

1. Clarification of behavior possibilities for the person with impaired hearing will reduce the threatening character of situations.

2. However, it is neither possible nor desirable to clarify completely

all the behavior possibilities, or to avoid all new situations. Without attempting a definition of "self-confidence" we may speculate that this ego quality serves to reduce the threatening character of new situations and thereby reduce the individual's egocentricity. How self-confidence may be developed is a complex therapeutic problem, involving feelings of security and other ego-strengthening characteristics, which we shall not attempt to discuss here.

3. Development of a philosophy and regimen of living which gives personal satisfaction in one's contribution to society may also reduce egocentricity.

4. An understanding objective attitude on the part of others, in contradistinction to feelings of pity or misguided sympathy, may help to shift the attention of the person away from the self and to the behavior possibilities of his situation. Such an attitude also may provide an atmosphere in which the handicapped person can express his wishes and despairs, thereby reducing tensions which need recognition and consideration, so that he is better able to attend to features of his world "outside his skin."

In this analysis we have suggested some concepts which integrate a variety of factors important in the somatopsychological situation of persons with impaired hearing. Other theories may prove more adequate. In any case, as further investigation increases our understanding, concepts which appear adequate today will be modified. However, one of the clearest results of this survey is that investigations which are not guided by approximately correct hypotheses are very likely to be sterile.

RESEARCH SUMMARY VI

Studies of Adjustment of Children with Impaired Hearing in Special Schools: Studies Using Personality Tests

Author: *Springer* (82)

Subjects and method: 397 children in 3 day and residential schools for the deaf compared with 327 children with normal hearing; Brown Psychoneurotic Inventory used.

Results: Children with impaired hearing scored significantly more neurotic than the normal children (C.R. = 10.3). Both groups scored considerably more neurotic than the standardization group.

Comments: No information is given about the degree of hearing loss or language status of the children with impaired hearing. A number of important factors other than deafness varied, e.g., the children in special schools were 4 years older on the average than the normal children (16 vs. 12). Test includes several items of different interpretive significance, e.g., "Do you ever have the feeling that you are not like other children?"

Author: *Springer and Roslow* (83)

Subjects and method: 59 pairs of children with impaired and normal hearing, 12–14 years of age, selected from Springer's study (82), matched on basis of age, sex, intelligence (Goodenough Drawing of a Man test), socio-economic status, and nationality. Brown Psychoneurotic Inventory used.

Results: Group with impaired hearing scored significantly more neurotic than normal group (C.R. = 5.6). Deletion of 7 items of different interpretive significance increased difference in mean scores.

Comments: It is difficult to understand why deletion of these items increased the difference between groups since the children with impaired hearing presumably would score more neurotic on these items. Item data are not given so analysis of what occurred is impossible. It is not clear whether institutional environment was controlled.

Author: *Gregory* (32)

Subjects and method: 57 pairs of children with impaired and normal hearing, 13–18 years of age, matched as to age and sex. Former in school for the deaf, latter in an institution for dependent children. Sections of various tests of personality used.

Results: Author's conclusion: children with impaired hearing tend to withdraw from social participation and responsibilities more than normal children.

Comments: Data given are inadequate for evaluation of conclusions.

Author: *McCormick* (56)

Subjects and method: Responses on the Aspects of Personality Test of 110 children in an elementary day school for the deaf compared with standardization group of normal children.

Results: Conclusion: the children with impaired hearing were markedly less stable emotionally, differed little in extroversion-introversion, and tended to respond in a somewhat more dominant manner than the normal children.

Comments: Institutional environment not controlled. Test includes several items of different interpretive significance, e.g., "I keep quiet when I am with other people," "I would sooner say than write what I think," "I find it hard to talk before other children." Few actual data presented.

Author: *Lyon* (52)

Subjects and method: 87 boys and girls averaging 19 years of age, attending a residential school for the deaf, compared with university students of the same age on the Thurstone Personality Schedule.

Results: 30% of the students with impaired hearing were either "emotionally maladjusted" or "should have psychiatric advice" according to Thurstone's classification. Twice as many subjects from the school as from the university fell into these classes.

Comments: Institutional environment not controlled. Test specifically designed for college freshmen (88) whereas experimental subjects were high school students. Test includes items of varying significance, e.g., "Do you have difficulty in starting a conversation with a stranger?"

Author: *Brunschwig* (12)

Subjects and method: Personality inventory for Deaf Children standardized on 183 pupils in a residential school for the deaf (average age 16) and 346 normal children of approximately comparable socio-economic status, race, and national origin, in a public day school (average age 13). This test, developed by the experimenter, consists of 67 items and yields scores on general adjustment, social adjustment, school adjustment, and home adjustment.

Results: Reliability of test adequate compared with other personality tests. Validity of the general adjustment score adequate, but questionable for the subscale scores. Inventory more valid for boys with impaired hearing than for girls.

Comments: Brunschwig's work is among the earliest efforts in the field. She recognized that existing tests of personality were not adaptable to the limited language background and experience of children with impaired hearing. She attributes the age difference of the two groups to the fact that the requisite language ability for answering the inventory tended to select chronologically more mature subjects among those with impaired hearing, while the simplicity of the form and wording of the Inventory made its administration to older, normal subjects not feasible. Different methods of validation were used with the two groups. For the normal subjects, the Inventory scores were correlated with those on other personality tests. For those with impaired hearing for whom no other personality tests were suitable, the Inventory scores were compared with teachers' ratings of adjustment. Analysis of the individual items reveals that they deal primarily with amount of social intercourse and not with such behavior as tact, cooperativeness, selfishness, etc.

Author: *Brunschwig* (12)

Subjects and method: From the above subjects, 80 pairs of boys with impaired and normal hearing matched on the basis of age, intelligence, and race; and a new group of 171 boys and 150 girls with impaired hearing selected from 6 residential schools and compared with the normal standardization group. Personality Inventory for Deaf Children used.

Results: The general adjustment score of the children with impaired hearing was significantly lower than that of the normal children. On the subscales, the discrepancy was greatest in social adjustment. In the main, differences were insignificant on the school and home adjustment scales.

Overlap in two groups much more striking than the slight differences in mean adjustment scores.

Comments: Institutional environment not controlled. Results on home adjustment are in line with Naffn's conclusion (63), based on observation in different situations and the answers to questions asked of 129 deaf children, that the deaf adjust well with their families with little friction.

RESEARCH SUMMARY VII

Studies of Adjustment of Children with Impaired Hearing in Special Schools: Studies Using Haggerty-Olson-Wickman Behavior Rating Scales

Author: *Kirk* (47)

Subjects and method: 112 children in an elementary day school for the deaf compared with the normal standardization population. The children with impaired hearing described as consisting of two groups: the deaf (average loss of 72 decibels on the 2-A audiometer), the hard of hearing (average loss of 50 decibels).

Results: On Schedule A, median score of experimental group = 29; for standardization population, 9. When the former were given the same score on the item referring to speech difficulties as the standardization population, the median score dropped to 16. On Schedule B also, the experimental group showed greater problem tendencies than the standardization population (C.R. = 4.8 for boys, 5.5 for girls). Greatest difference in emotional traits.

Comments: Comparability of the two groups in other respects than hearing not established, which makes it impossible to state even tentatively the factors which may account for the differences. Some evidence that older boys are rated on these schedules as having greater problem tendencies (34), and it is probable that the deaf were older than the standardization group, although chronological ages not given. Item data not given.

Author: *Burchard and Myklebust* (13)

Subjects and method: 187 children in a school for the deaf compared with Rating Schedule norms.

Results: On Schedule A, median scores of various groups with impaired hearing range from 23 to 59 for boys and from 5 to 15 for girls in contrast to the norms of 12 for boys and 5 for girls. On Schedule B, median scores of the groups with impaired hearing range from 72 to 84 for boys and from 66 to 73 for girls in contrast to the norms of 69 for boys and 63 for girls.

Comments: Results inconclusive for the same reasons as in Kirk's study.

Author: *Springer* (81)

Subject and method: 377 children with impaired hearing, 6–12 years of age, compared with 415 normal children equated for age, intelligence (Goodenough Test), and socio-economic status.

Results: On Schedules A and B both groups were rated as presenting more behavior problems than the standardization group. On Schedule A both groups received ratings in the 80th percentile. On Schedule B boys with impaired hearing were rated superior to the normal boys, girls with impaired hearing equal to the normal girls.

Comments: More adequate controls than in the two preceding studies. Though the introduction of a normal control group should permit more valid inferences as to the effects of impaired hearing, the comparability of the standards of the teachers of the two groups is questionable. The teachers were instructed to rate each child according to the behavior of normal children, but each group was rated by teachers who worked only with that group.

RESEARCH SUMMARY VIII

Studies of Social Competence of Children with Impaired Hearing

Author: *Bradway* (10)

Subjects and method: 92 children, 5–21 years of age, in a residential school for the deaf, who lost hearing before age 2. Hearing loss in better ear 70% or more for 4/5 of subjects, not less than 35% for any of them. Scores obtained by interviewing attendants and compared with normal standardization population.

Results: Average social quotient 80.7 in contrast to 100 for standardization group. Experimenter concludes "that deafness handicaps a person's social intelligence by about 20%." For item data see discussion in text, p. 176.

Comments: First investigation to use scale. Socio-economic status of experimental group made equal to that of standardization group. Factor of intelligence not controlled. Main question is whether the deficiency is due primarily to the factor of hearing impairment. For discussion of this point see p. 176.

Author: *Burchard and Myklebust* (13)

Subjects and method: 104 children, in the same residential school as Bradway's children, compared with test norms.

Results: The various groups with impaired hearing showed an average retardation in social maturity from 15 to 20 points.

Comments: Experimenters stress the significance of the residential environment, concluding that "residential schools are not adequately training children in social competence."

Author: *Streng and Kirk* (85)

Subjects and method: 97 children, 6–18 years of age, in a day school for children with impaired hearing, 51 averaging a hearing loss of 72 decibels in the better ear on the 2-A audiometer and 46 averaging 46 decibels. Intelligence average on two nonlanguage tests. Scores obtained by interviewing mothers or guardians and compared with test norms.

Results: Average social quotient, 96, indicating average social maturity.

Comments: This quotient is amazingly high in view of the many items directly relating to hearing, speech, and reading. For examples of such items see discussion in text, p. 175. No item data presented.

RESEARCH SUMMARY IX

Studies of Fears of Children with Impaired Hearing

Author: *Pintner and Brunschwig* (72)

Subjects and method: Comparison of responses, on a check list of 39 fears, of 159 children with impaired hearing and 345 normal children, in grades 5–8. The former were 2–3 years older on the average, had an average hearing loss of about 80% in the better ear, and attended a day school for the deaf.

Results: The difference between the average number of fears checked by the boys with impaired and normal hearing is very small (8.1 vs. 7.6) but the girls with impaired hearing reveal a significantly greater number of fears than normal girls (13.1 vs. 10.1). The 6 fears checked by over 50% of the boys with impaired hearing are the same as the 6 most frequently checked by the normal boys and both groups of girls: war, death, bad men, robbers, snakes, fire. The girls with impaired hearing were the only group in which a majority feared other items (lightning, mouse, thunder, hospital). Both boys and girls with impaired hearing more frequently expressed fear of thunder than their control groups. The girls also expressed fear of the dark more frequently than their control group (46% vs. 28%).

Comments: Fear list selected from the answers of children with normal hearing to the question "I am afraid when—." This procedure probably tends to minimize the differences between the impaired and normal groups. The differences between them are far less than the sex differences.

Author: *Brunschwig* (12)

Subjects and methods: 171 boys and 150 girls with impaired hearing selected from 6 residential schools and compared with 340 children with normal hearing on an item of the Personality Inventory for Deaf Children referring to fear of the dark.

Results: Boys and girls with impaired hearing more frequently reported that they were afraid in the dark than their respective control groups (about 40% vs. 20% for boys; about 70% vs. 40% for girls).

Author: *Kimmins* (46)

Subjects and method: 140 boys and girls, 10–16 years of age, in schools for the deaf compared with about 4,000 children with normal hearing in respect to fears in the last dream they remembered.

Results: Author states that fears appeared excessively in dreams of deaf children. Fears of animals was mentioned especially and occurred twice as frequently in dreams of the deaf as in those of blind children.

Comments: Few actual data presented.

Author: *Gregory* (32)

Subjects and method: See Research Summary VI, pp. 211–214.

Results: Of 4 fear items in the personality tests, 3 were more frequently checked by the children with impaired hearing.

Comments: Data given are inadequate for evaluation of results.

RESEARCH SUMMARY X

Studies of Adjustment of Children with Impaired Hearing in Regular Schools

Author: *Habbe* (34)

Subjects and method: 48 hard-of-hearing boys, aged 12–16 years, matched with normal boys according to school, grade, age, intelligence (Terman Group Test), nationality, and socio-economic background. The hard of hearing had a minimum biaural hearing loss of 15 decibels, ranging as high as 61 and 79 decibels in the right and left ears, respectively (2-A Test). Average I.Q. for both groups in the low 90's. Aspects of Personality Test, Haggerty-Olson-Wickman Behavior Rating Schedules, and the Symonds Adjustment Questionnaire used. Also, the author constructed an autobiographical outline used by the children in writing on such aspects of their personal life as early memories, troubles, wishes, etc. These were scored according to the frequency with which particular problems and attitudes were mentioned. Interviews were conducted with the 10 best and 10 poorest adjusted hard-of-hearing boys selected on the basis of the personality tests and rating scales.

Results: The hard-of-hearing and control groups made about the same scores on the two personality tests and the teachers' rating scale (H–O–W), although 5 of the 6 scores derived from these measures slightly favored the control group. Analysis of 20 items from the teachers' rating scale which have been assumed to characterize persons with impaired hearing gave the following main results: 1. Only one difference was statistically reliable. The hard of hearing were rated as having significantly greater speech difficulties than the boys with normal hearing. 2. The hard of hearing tended to be rated as slightly more easily discouraged, abstracted, and fatigued, as less flexible and slower in thinking than the control group (C.R.'s between 1 and 2). 3. They tended to be rated as slightly less suspicious than the normal group (C.R. 1.72). 4. They made practically the same scores as the normal group on the remaining 13 items: social shyness, school truancy, reaction toward authority, careful thinking, temper outbursts, sustained attention, mental activity, indifference, personal appearance, physical energy, social habits, moods, and depressed attitudes.

Of the 14 comparisons made from the autobiographical sketches, 7 favored the normal, and 4 the hard-of-hearing boys, though for no item was there a statistically significant difference. The main results were: 1. Not one of the hard of hearing expressed a wish for better hearing. 2. Fewer hard of hearing than normal boys mentioned special troubles (13 vs. 21) and only 6 of the former referred to bad hearing in this connection. 3. The hard of hearing tended to express greater satisfaction with their present age than did the normal boys. (This result differs from that obtained in Brunschwig's study of children in special schools [12].) From these trends, Habbe concludes that the hard of hearing tended to minimize their difficulties, but he attempts no explanation.

The results obtained from the interviews are presented in the text, pp. 192, 196, 203.

Comments: This is the most careful and intensive study in this area. One important consideration is whether the main finding, namely, that hard-of-hearing and normal boys are markedly similar in their general adjustment as evidenced by the personality measures used, may be accounted for by the fact that a number of the boys, as revealed in the interviews, had not been aware of their hearing defects until they were given the audiometer tests. An objective deficiency need not imply a psychologically real fact which can influence behavior. This consideration is not too serious, however, since a group of 24 boys with an average hearing loss of 35 decibels, a sufficiently great loss to lead almost certainly to awareness, did not differ significantly on the personality measures from either the normal boys or a group of boys with an average hearing loss of 19 decibels.

Author: *Madden* (53)

Subjects and method: 46 hard-of-hearing children in elementary school, selected on the basis of three audiometer tests which showed a hearing loss in both ears of at least 15 decibels, compared with 46 children with normal hearing matched for age, sex, intelligence, and race, with respect to teachers' ratings of attentiveness, obedience, attitude toward treatment by others (such as feelings of unfairness), leadership, and shyness-solitariness.

Results: Ratings on the first three traits were the same for the two groups. Hard-of-hearing children were rated lower on leadership and markedly shyer and more solitary than the normal children.

Comments: The results agree with Habbe's as far as attentiveness, obedience, and attitude toward treatment by others (akin to suspiciousness) are concerned but there is sharp disagreement with respect to shyness.

Author: *Pintner* (69)

Subjects and method: 1,397 hard-of-hearing children in grades 5–8, obtained from a list of the N. Y. League for the Hard of Hearing, and 1,604 normal children, selected at random from the same classes, compared on the Pupil Portraits Test.

Results: The hard-of-hearing boys scored only slightly lower than their control group on school adjustment (2.1 points) and family adjustment (.6 points), though the differences are statistically significant. The hard-of-hearing girls also scored slightly lower than their control group in these areas but the differences are statistically unreliable.

Comments: The interpretive labels as usual must be used with great caution. Heider has pointed out that the sex difference found in this study is greater than that between the normal and hard-of-hearing groups. This suggests that the test may not measure "adjustment" (39); that is, while the boys may be more aggressively negative than the girls, it does not mean that they are less well adjusted. Relevant item data not presented.

Author: *Pintner* (70).

Subjects and method: 1,171 hard-of-hearing children in grades 5–8, obtained from a list of the N. Y. League for the Hard of Hearing, compared with 1,208 normal children, selected at random from the same classes, on the Aspects of Personality Test.

Results: On the ascendence-submission and extroversion-introversion scales both groups scored the same. On emotional stability, there was some tendency for the more extreme cases of hearing loss to score lower than the normals, though the hard-of-hearing group as a whole did not score appreciably lower.

Comments: Relevant item data not presented.

Author: *McCormick* (56)

Subjects and method: Comparison of responses, on the Aspects of Personality Test of 287 hard-of-hearing children (with a loss of 9 decibels or more in either ear on the 4-A audiometer) and 282 children with normal hearing matched for age, grade, and sex.

Results: Data not presented. Summary statement: "the hard of hearing group did not deviate from the norms with respect to Ascendence-Submission or Extroversion-Introversion but in emotional stability the median of the group deviated markedly from the norm in the direction of lack of adjustment."

Comments: Results only partly support Pintner's findings.

RESEARCH SUMMARY XI

Studies of Degree of Hearing Loss and Adjustment

Children Attending Special Schools

Author: *Brunschwig* (12)

Subjects and method: 141 boys and 42 girls in a residential school for the deaf, average age 16; Brunschwig Personality Inventory for Deaf Children.

Results: Between percentage hearing in better ear and good adjustment, r = .22 for boys and .37 for girls (statistically significant).

Author: *Springer* (82)

Subjects and method: 374 children in 3 day and residential schools for the deaf; Brown Psychoneurotic Inventory for Children.

Results: No relationship between neurotic score and amount of residual hearing (r = —.02 for boys and —.08 for girls).

Author: *McCormick* (56)

Subjects and method: 110 children in an elementary day school for the deaf given Aspects of Personality Test and 106 children given Pupil Portraits Test.

Results: For 100 children no relationship between amount of hearing loss and ascendence (r = —.10), extroversion (r = —.02), or emotional stability (r = —.14). For 106 children r = .61 between amount of hearing loss and percentile scores, higher scores indicating better adjustment (statistically significant).

Author: *O'Connor and Simon* (65)

Subjects and method: 49 problem children aged 6–20, in a residential school, selected on basis of teachers' and counselors' ratings and Brunschwig's Inventory for Deaf Children compared with remaining 206 pupils in school population.

Results: No difference in median hearing loss of problem children and remaining school population (median loss = 91 decibels).

Author: *Springer* (81)

Subjects and method: 200 boys and 150 girls aged 6–12 in 3 day and residential school for the deaf; Haggerty-Olson-Wickman Behavior Rating Schedules.

Results: Very small and unreliable correlations between percentage hearing loss and behavior ratings (r's range from —.08 to +.20).

Author: *Kirk* (47)

Subjects and method: See Research Summary VII, pp. 214–215. Scores, on Schedule B of Haggerty-Olson-Wickman Behavior Rating Schedules, for children with average hearing loss of 50 decibels on a 2-A audiometer compared with scores for children with average loss of 72 decibels.

Results: No significant differences between the two groups (mean scores 80 and 79).

Author: *Streng and Kirk* (85)

Subjects and method: See Research Summary VIII, pp. 215–216. Vineland Social Maturity Scale used.

Results: No significant differences between the two groups (mean S.Q.'s 96 and 97).

Author: *Pintner and Brunschwig* (72)

Subjects and method: See Research Summary IX, pp. 216–217. A check list of 39 fears and 7 sets of wishes permitting a choice between immediate fulfillment of a small gratification and a delayed greater gratification used.

Results: Correlations between scores on fears and wishes and percentage hearing in better ear slight and unreliable (r's range from —.18 to +.08).

Children Attending Regular Schools

Author: *Habbe* (34)

Subjects and method: 48 hard-of-hearing boys and tests described in Research Summary X, pp. 217–219; 10 best and 10 poorest adjusted boys selected on basis of the three tests of personality and adjustment.

Results: Very small and unreliable correlations between hearing loss and personality measures (r's range from —.15 to +.14). No appreciable difference in audiometer scores for 10 best and 10 poorest adjusted boys (mean decibel loss in better ear, 19.3 and 24.6 on 2-A test).

Author: *Pintner* (69)

Subjects and method: 920 slightly hard-of-hearing children (with a loss of less than 15 decibels in better ear), and 577 extremely hard-of-hearing children (with a loss of 15 or more decibels in better ear) compared with 1,604 normal children on Pupil Portraits Test.

Results: The extremely hard-of-hearing children scored 2 to 3 points lower, indicating poorer adjustment than the slightly hard-of-hearing. Correlations between hearing loss and adjustment scores, for boys and girls, range from r = —.01 to —.13 and are not reliable.

Author: *Pintner* (70)

Subjects and method: 516 children with a hearing loss of 15 or more decibels in better ear, and 48 children with a loss of 30 or more decibels, compared with 1,208 normal children on the Aspects of Personality Test.

Results: Correlations of hearing loss with ascendence and extroversion scores range from r = —.08 to +.08 and are not significant; with emotional stability scores, r = —.07 for boys and —.14 for girls, the latter being statistically significant.

Adults

Author: *Welles* (93)

Subjects and method: 184 women members of organizations for the hard of hearing; neurotic-tendency scale of Bernreuter Inventory.

Results: r = .12 between neurotic-tendency and hearing in better ear (not significant).

RESEARCH SUMMARY XII

Studies of Age at Loss of Hearing and Adjustment

Children Attending Special Schools

Author: *Brunschwig* (12)

Subjects and method: 183 children in a residential school for the deaf, with onset of hearing loss between 0 and 10 years of age, and 857 children from 6 residential schools; Brunschwig's Personality Inventory for Deaf Children.

Results: For various sex and geographical groups correlations between age at onset of hearing loss and good adjustment range from r = .01 to r = .28 and are not statistically reliable. In contrast, boys from the larger group who lost their hearing before age 1 made significantly better scores than those who lost their hearing at age 4 or later (mean scores, 107 and 103).

Author: *Springer* (82)

Subjects and method: 377 children in 3 day and residential schools for the deaf; Brown Psychoneurotic Inventory for Children.

Results: Contingency correlations between age at loss of hearing and neurotic score (high score indicating poor adjustment) = .39 for girls and .13 for boys.

Author: *McCormick* (56)

Subjects and method: 106 children in an elementary day school for the deaf; Pupil Portraits Test.

Results: Slight tendency for those who lost hearing at a later age to feel better adjusted. No data given.

Author: *O'Connor and Simon* (65)

Subjects and method: See Research Summary XI, pp. 220–222.

Results: ⅔ of both groups congenitally deaf. Median age at onset of deafness = 3 years for adventitiously deaf problem children, and 2 years for adventitiously deaf in remainder of school population.

Author: *Burchard and Myklebust* (14)

Subjects and method: 120 congenitally deaf children in a residential school compared with 67 children who lost their hearing after speech was attained; Haggerty-Olson-Wickman Behavior Rating Schedules.

Results: No consistent differences found in various comparisons of the two groups, by sex, on Schedules A and B.

Author: *Springer* (81)

Subjects and method: See Research Summary XI, pp. 220–222.

Results: Contingency correlations range from .17 to .41 between scores on Schedules A and B (high scores indicating more behavior problems) and age at onset of hearing loss for boys and girls.

Author: *Bradway* (10)

Subjects and method: 92 children in a residential school who lost their hearing before age 2 compared with 11 who lost their hearing after age 5, on Vineland Social Maturity Scale.

Results: Average S.Q. was 4 points greater for group who lost hearing after age 5, but difference not significant; greater variability found in this group.

Author: *Streng and Kirk* (85)

Subjects and method: 26 children who lost their hearing before the age of 2½ years compared with total group of 97 children in an elementary day school for the deaf; Vineland Social Maturity Scale.

Results: No difference in average S.Q.'s of two groups (96.1 and 96.2).

Author: *Burchard and Myklebust* (14)

Subjects and method: 54 congenitally deaf children, in a residential school, compared with 50 children who lost their hearing after speech was attained; Vineland Social Maturity Scale.

Results: No significant differences found between the two groups (S.Q.'s = 85.0 and 82.4).

Author: *Pintner and Brunschwig* (72)

Subjects and method: See Research Summaries IX, pp. 216–217 and XI, pp. 220–222.

Results: Correlations between scores on fears and wishes and age at hearing loss slight and unreliable (r's range from —.21 to +.08).

Adults

Author: *Welles* (93)

Subjects and method: See Research Summary XI, pp. 220–222.

Results: No relationship between neurotic-tendency scores and age at hearing loss (r = —.06).

Author: *Pintner* (67)

Subjects and method: 94 residents of rural communities who were members of a correspondence club for isolated hard-of-hearing persons; neurotic-tendency scale of Bernreuter Inventory.

Results: No relationship between neurotic-tendency scores and age at hearing loss (eta = .01, .08).

Author: *Pintner, Fusfeld, and Brunschwig* (74)

Subjects and method: 126 deaf persons in all parts of the U. S. obtained through key persons, and 50 students at Gallaudet College; Bernreuter Inventory.

Results: Correlations between age at hearing loss and neurotic-tendency and introversion scores range from r = —.06 to r = —.33 for men and women; correlations between age at hearing loss and dominance and self-sufficiency scores range from r = +.20 to r = +.55.

RESEARCH SUMMARY XIII

Studies of Chronological Age and Adjustment of Persons with Impaired Hearing

Children Attending Special Schools

Author: *Springer* (82)

Subjects and method: 397 children in 3 day and residential schools for the deaf; Brown Psychoneurotic Inventory.

Results: Tendency for older children to give more neurotic answers than the younger (r = .27 ± .03).

Author: *Brunschwig* (12)

Subjects and method: 183 children in a residential school for the deaf, average age 16; Brunschwig Personality Inventory for Deaf Children.

Results: Slight tendency for age to be positively associated with good adjustment (r's range from .12 to .38 on the subscales).

Author: *O'Connor and Simon* (65)

Subjects and method: See Research Summary XI, pp. 220–222.

Results: No relationship between chronological age and adjustment: median age of both the problem group and general school population, 14 years.

Author: *Pintner and Brunschwig* (72)

Subjects and method: See Research Summary IX, pp. 216–217.

Results: No relationship between age of children with impaired hearing and number of fears checked (r = .06 for boys and .11 for girls).

Adults

Author: *Pintner, Fusfeld, and Brunschwig* (74)

Subjects and method: See Research Summary XII, pp. 222–224.

Results: For 50 students, slight but unreliable tendency for age to be positively associated with poor adjustment (r's range from .14 to .29 on the separate scales); for 126 deaf persons, slight but unreliable tendency for age to be positively associated with good adjustment (r's range from .02 to .22 on the separate scales).

Author: *Frackelton* (28)

Subjects and method: 20 subjects over age 25 and 18 subjects 18–25, all of whom had lost hearing before age 14, but the 18 had slight residual hearing. Questionnaire on personal attitudes used.

Results: Conclusion that adults over 25 tend to accept their handicap more adequately than adults below 25 based on the following findings: 1. Attitude toward impairment: The subjects 18–25 in general expressed an attitude of resentment or regret whereas the older age group felt more resigned to their handicap. (Actual data not given.) 2. Feelings of self-consciousness: 95% of the younger subjects expressed strong feelings of self-consciousness in contrast with only 35% of the older subjects. 3. Suspiciousness: 84% of the younger subjects reported that they were suspicious of people while only 5% of the older subjects so reported, though many of these said they had been more suspicious when young. 4. Reaction toward radio and movies: the younger subjects expressed more resentment than the older subjects when other family members listened to the radio. Similarly, several of the younger adults felt sad or irritated when attending the movies, whereas those in the older group invariably expressed themselves as being happy and enjoying the movies.

RESEARCH SUMMARY XIV

STUDIES OF INTELLIGENCE AND ADJUSTMENT OF PERSONS WITH IMPAIRED HEARING

Children Attending Special Schools

Author: *Brunschwig* (12)

Subjects and method: 141 boys and 42 girls in a residential school for the deaf compared with 346 normal children; Brunschwig Personality Inventory for Deaf Children and Pintner Non-Language Mental Test.

Results: Weak positive association between good adjustment and intelligence, for all groups. Author notes that the relatively high correlations for girls with impaired hearing (r's range from .43 to .51) are probably due to selection of subjects.

Author: *Springer* (82)

Subjects and method: 376 children in 3 residential and day schools for the deaf compared with 295 normal children; Brown Psychoneurotic Inventory for Children and Goodenough Drawing of a Man Test.

Results: No significant correlation between intelligence and neurotic scores (r's = .10 and .02 for groups with impaired and normal hearing).

Author: *Springer* (81)

Subjects and methods: See Research Summary VII, pp. 214–215; Haggerty-Olson-Wickman Behavior Rating Schedules and Goodenough Drawing of a Man Test.

Results: Correlations between intelligence and behavior problem tendencies in deaf children are weak and negligible, with r's ranging from —.15 to +.02. For children with normal hearing comparable r's ranged from —.02 to —.32.

Author: *Burchard and Myklebust* (14)

Subjects and method: See Research Summary VIII, pp. 215–216; Haggerty-Olson-Wickman Behavior Rating Schedules, and Grace-Arthur Performance Test of Intelligence.

Results: No significant correlations found between intelligence and behavior problems; between intelligence and social maturity, r = .38 ± .04.

Author: *Streng and Kirk* (85)

Subjects and method: See Research Summary VIII, pp. 215–216; Vineland Social Maturity Scale, Arthur Performance Scale, and Chicago Non-Verbal Test.

Results: r = .29 between scores on social maturity and on each intelligence test. Positive correlation also found for subjects with normal hearing, in other studies.

Author: *O'Connor and Simon* (65)

Subjects and method: See Research Summary XI, pp. 220–222; intelligence test not indicated.

Results: No significant difference in median I.Q. of problem group and remaining school population (94 and 99).

Children Attending Regular Schools

Author: *Pintner* (70)

Subjects and method: 1,089 hard-of-hearing children in grades 5–8; Aspects of Personality Test and Pintner Intelligence Test (group verbal test).

Results: Weak correlations between scores on personality and intelligence tests (r's range from .06 to .28).

Author: *Habbe* (34)

Subjects and method: 10 best and 10 poorest adjusted selected from a group of 48 hard-of-hearing boys on basis of 3 tests of personality and adjustment; Terman group test of mental ability.

Results: Mean I.Q. of 10 best adjusted, 99; of 10 poorest adjusted, 90.

RESEARCH SUMMARY XV

Studies of Means of Communication, Hours of Lip Reading Instruction, and Adjustment

Author: *Pintner and Brunschwig* (71)

Subjects and method: Brunschwig Personality Inventory for Deaf Children administered to 714 children in schools for the deaf, some of whom were being taught by the oral method, some by the manual method, some by a combination of the two.

Results: The manually taught pupils scored lowest in general adjustment. There was no difference between the other two groups. C.R. between adjustment scores of "oral" and "manual" pupils = 2.6 for boys and 2.2 for girls.

Comments: Unfortunately, as the authors point out, no conclusions are possible since the obtained differences might be due to the selection of pupils for the manual and oral classes. They say, "In most schools having more than one method of instruction, pupils who are less intelligent, who are least promising in the eyes of the teachers, and who are the most difficult to handle, are relegated to manual classes."

Author: *Pintner, Fusfeld, and Brunschwig* (74)

Subjects and method: Comparison of scores made on the Bernreuter Inventory by adults with impaired hearing who communicated with normal persons mainly by speech (N = 40), by speech and writing (N = 38), and by writing (N = 39).

Results: The group using speech only tested less neurotic, more extroverted, more self-sufficient, and more dominant than those using writing. The group using both methods was intermediate.

Comments: All the criticisms of the use of the Bernreuter Inventory for "deaf" subjects apply here (cf. pp. 180–185). In addition, the authors point out that the results do not necessarily mean that training in speech and lip reading makes an individual less neurotic; they may just as well mean that the less neurotic, more dominant, more extroverted, more self-sufficient persons are the ones who put their speech to use.

Author: *Pintner* (67)

Subjects and method: See Research Summary XII, pp. 222–224. Neurotic-tendency scores correlated with hours of lip reading instruction.

Results: No relation between neurotic tendency and hours of lip reading instruction (eta = .03, .02).

Comments: As in the preceding study all the criticisms of the use of the Bernreuter Inventory for deaf subjects are applicable.

Author: *Welles* (93)

Subjects and method: See Research Summary XI, pp. 220–222. Neurotic-tendency scores correlated with hours of lip reading instruction.

Results: No relationship between neurotic tendency and hours of instruction.

Comments: Again, all the criticisms of the use of the Bernreuter Inventory are applicable.

Author: *Habbe* (34)

Subjects and method: See Research Summary XIV, pp. 225–226. 10 best and 10 poorest adjusted boys compared with respect to hours of lip reading instruction.

Results: No relationship between adjustment and hours of instruction.

CHAPTER VI

SOCIAL PSYCHOLOGY OF ACUTE ILLNESS

The psychology of the acutely ill person is a basic consideration in problems of hospital organization, doctor-patient relations, reconditioning, and occupational therapy. In acute illnesses, the unusual physiological state of the patient often has a direct influence upon the central nervous system, giving rise to striking behavioral manifestations. These dramatic alterations in behavior arising from physiological conditions have tended to obscure the fact that all illnesses have somatopsychological significance, too, and that these indirect influences may be the basis of changes in the patient's behavior which can accellerate or retard recovery.

The first problem facing all medical technicians in their personal approach to patients is that of seeing the situation from the patient's viewpoint, just as the first task of the teacher, if he is to be effective with students, is to understand the significance of his own actions and the regime of the school for them. Common experience suggests that this is frequently difficult for medical personnel, and it is evident that lack of such understanding can seriously interfere with some diagnostic and therapeutic procedures. An illustration may serve to clarify the situation: To the medical technician the giving of a basal metabolism test is a routine task, the outcome of which has little significance for his own personal welfare. However, to the individual undergoing the test the procedures are almost always strange and the outcome is of vital significance. Like the suitor in *The Lady, or the Tiger?* he is in a life-and-death situation over which he has no control. He does not know the implications of the procedures for the outcome and sometimes fantastically misinterprets them. Under these circumstances, the customary instruction to "lie down and relax" can be little more than futile. This may be one of the sources of the unreliability of basal metabolism data. As we shall find, there are a number of possible changes in the administration of such routine tests which would remove at least some of the interfering psychological factors so often present.

In short, the doctor and the patient live in utterly different psychological worlds within which the same action has entirely dissimilar meanings for each participant. Before considering the concrete problems of hospital organization, doctor-patient relations, reconditioning and occupational therapy, a general discussion of the social psychology of diagnosis and therapy, illness and convalescence is in order.

THE PSYCHOLOGY OF DIAGNOSTIC AND THERAPEUTIC SITUATIONS

Diagnosis and treatment have diverse meanings for different persons, for example, for those who consider themselves basically healthy and those who have accepted the status of being ill, or for those with minor ailments and those with major afflictions. The manifold psychological significance of diagnostic and treatment procedures are problems for investigation rather than speculative discussion, but we can indicate the importance of these problems by describing the salient psychological aspects of diagnosis and treatment in a number of situations.

Diagnosis and Treatment to the Healthy Person

While to the medical practitioner, diagnosis and therapy are often routine technical jobs, to the patient the situation never has such a limited impersonal meaning. To him diagnosis and therapy are a route to highly important life conditions. This larger significance of illness to the patient has been discussed eloquently by Kahn (65).[16] We shall consider, first, some aspects of the situation of the person who regards himself as healthy, but who goes for diagnosis and treatment because of disturbing symptoms.[17]

Usually the state of health which the individual seems to be leaving is highly attractive to him, while the immediate symptom forcing him to seek medical attention is unattractive. Medical attention is unattractive too because it is likely to be painful, expensive, and time consuming, and the state of prolonged illness which it may confirm is also unattractive. On the other hand, medical attention may lead to almost immediate remission of symptoms and return to a state of good health. Thus the person is inevitably in a state of conflict the magnitude of which will depend upon his conception of the degree of attractiveness and unattractiveness of these alternatives.

In this state of conflict certain behavior inevitably will occur. The person will vacillate between seeking and avoiding medical care; and he will exhibit emotional symptoms revealing more or less uncharacteristic behavior to the physician. It is well known that this emotionality may affect the physiological functioning of the patient. The effects of this emotionality upon the patient's sensations, perceptions, memory, and cooperation are probably less well recognized. He is certain to give a more or less false report of his present and past symptoms. He will make every effort to reduce the seriousness of his condition for this is his only way of escaping the painful conflict. Many persons experience a great freedom from their symptoms when they walk into a doctor's office. Undoubtedly, both conscious and unconscious mechanisms are involved here.

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[16] References for Chapter VI will be found on pp. 325–332.

[17] This situation is represented in the figure on the following page.

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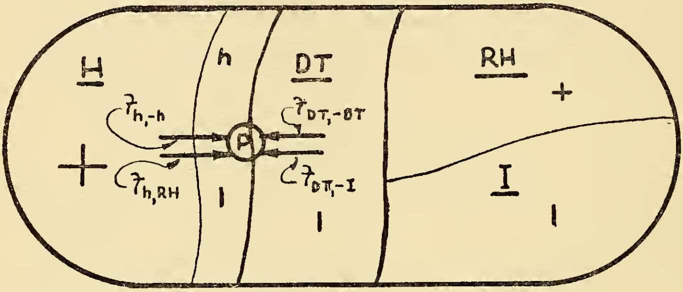
[17] *(continued)*



Diagnosis and Treatment for the Healthy Person

H = Situation of healthy person (positive valence)
h = Subregion of H; indisposition; pain; discomfort (negative valence)
DT = Diagnostic and treatment situation (negative valence)
RH = Situation of renewed health (positive valence)
I = Ill person's situation (negative valence)
$f_{h,-h}$ = force in h away from h
$f_{h,RH}$ = force in h toward RH
$f_{DT,-DT}$ = force in DT away from DT
$f_{DT,-I}$ = force in DT away from I
P = Person

Usually region H (health) which the individual is leaving is highly attractive (of positive valence); it has a subregion h (discomfort, fatigue, etc.) that is unattractive (of negative valence). Region DT (diagnosis and treatment) is of negative valence (painful, expensive, time consuming). Region I (illness) to which DT may lead is negative too (pain, helplessness, expense, dependency, and perhaps death). Region RH (renewed health) to which DT may also lead is positive. Under these circumstances the individual is in a multiple conflict as he enters region DT (seeks diagnosis and treatment). Two forces impel him into DT: the desire to avoid the discomfort of h ($f_{h,-h}$), and the desire to regain health ($f_{h,RH}$). Two forces resist the locomotion to DT: the desire to avoid the pain and expense of diagnosis and treatment ($f_{DT,-DT}$), and the desire to avoid the discomfort, cost, and danger of illness ($f_{DT,-I}$). Only when the combined strength of $f_{h,-h}$ and $f_{h,RH}$ is greater than that of $f_{DT,-DT}$ and $f_{DT,-I}$ will the person persist in securing medical attention. The amount of conflict will depend upon the person's conception of the degree of attractiveness and unattractiveness of the alternatives involved.

There is much to be learned about how the patient's report of his symptoms should be interpreted under these conditions. McNemar and Landis (88) obtained a correlation of only .50 between *patients' reports* of frequency of illness and their *hospital records.* In this connection Rapaport's survey of the influence of emotion on memory is important (107). This is a field where experimental investigation is possible. Comparison of patients' responses in a standardized interview before and after successful treatment would appear to be entirely feasible.

Lunt (83) agrees with the above analysis and suggests that it would be advantageous if the attitudes of patients could be made more confident. It would seem, however, that the greatest opportunity for improving medical practice in this respect lies in removing some of the negative features of the diagnostic and treatment situation. To some extent, illness or potential illness is of course inherently undesirable; but we commonly add to it unnecessary negative characteristics which become an important source of resistance. As medical practice becomes more preventive, psychological factors which inhibit patients from seeking early medical attention become relatively more important and merit consideration at this point.

Unfamiliarity with diagnostic and treatment techniques. Physicians are apparently largely unaware of the utter newness of medical procedures to laymen and of the unfortunate psychological effects which important new experiences have upon patients. It seems to laymen, at least, that medical practitioners unnecessarily develop a language which is incomprehensible to the uninitiated, and that they unnecessarily exclude lay persons from the mysteries of the profession. In this connection, physicians exhibit behavior similar to that of some adults in their dealings with children. When a child does not understand the language used by adults in handling a problem, it is frequently assumed that he is unaware of the problem and therefore no effort is made to inform him in terms he can understand. We have discussed the significance of new psychological situations and need only point out here that all the expected behavioral resultants will occur during diagnosis and treatment, i.e., conflict, caution, emotionality, exploration, suggestibility, vacillation (cf. pp. 22–32).

There is no doubt that much could be done to remove the conditions which cause this sort of behavior during treatment. Actually, some practitioners go to considerable lengths to provide a familiar situation for patients. There are dental clinics, attached to school systems, where children are taken on visits to the dentist's office, allowed to sit in the chair, turn on the water and air, observe the drills, etc. before they require dental treatment. This familiarity with equipment and procedures, plus the satisfactory social experience, is reported to reduce greatly both the resistance of children to dental care and their emotionality during treatment. Undoubtedly an extensive program of familiarizing people with many kinds of medical institutions and diagnostic and treatment procedures would have similar beneficial effects.

We must face the fact that illness is of central importance to the patient, so much so that he becomes an "expert" upon his own particular case. The adequacy of his "expertness" will depend upon his educational level and the information made available to him. As medical knowledge advances, and as medical practice becomes increasingly preventive, treatment becomes more and more an educational problem. Even today, the effectiveness of much medical knowledge is limited by the poor teaching techniques of some practitioners. The "treatment" of tuberculosis, diabetes, some kinds of cardiac conditions, nutritional deficiencies, etc. is largely a problem of educating patients in new ways of living. These are difficult tasks about which we know little, but about which we could learn much. Scattered beginnings have been made, for example, the Des Moines Veterans Administration Facility has a suggestive program for training diabetic patients (11), and the National Research Council Committee on Food Habits has done pioneering work on psychological problems in nutrition (150).

In addition to the problem of removing the unknown by familiarizing the patient with the situation which faces him, there is the possibility of avoiding unessential strange aspects of medical procedures. This is especially important in office and clinic practice. For example, a doctor may take the patient's history dressed in a medical gown with a head lamp strapped on his forehead and a stethoscope around his neck, in an office lined with glass cabinets displaying his instruments; or the interview may take place in an environment differing little from that in a lawyer's office. With many kinds of diagnostic and treatment procedures, there is some choice between confronting the patient with the details of his own treatment and the techniques being applied to others, or of limiting his contact to the essential aspects of a single procedure. Technical efficiency alone may dictate that equipment be so arranged that the patient sees a variety of strange instruments; whereas for his peace of mind, and without any serious interference with technical efficiency, only a small part of the equipment to be used may need to be in view. Some examples may make the possibilities clear.

In planning offices for a radiologist, the technical problems of making photographs and fluoroscopic examinations and of giving treatments may determine the lay-out; or possible effects of arrangements upon patients may be allowed to modify the plans. Control panels may be exposed or they may be concealed; the operator may be in sight of the patient, or elsewhere; sounds of the machines may be diminished or exaggerated; treatment and dressing rooms may be soundproof, or in them the patient may hear treatment and discussion of other patients. Which of these arrangements is most desirable is unknown at the present time but could be determined. Similarly, operating room procedure can be varied within considerable limits without sacrificing technical efficiency. The policy of having a common waiting room for surgical patients as opposed to waiting in private rooms is an issue amenable to investigation. The administration of anaesthesia is also modifiable within considerable limits; it is an experience which can be made more or less traumatic for patients. These questions are not related to the patient's comfort only. The possibility of beginning treatment early, when therapy is most effective, depends upon lowering resistance to securing treatment. Likewise, the therapeutic effect of many treatments is undoubtedly influenced by the emotional reactions of the patient. There is evidence of an increasing awareness of these problems, especially in the treatment of children; reference will be made in a later section to some preliminary investigations in this area (cf. pp. 247 ff.). Ewalt (43) discusses some of these questions in regard to the psychiatric preparation of surgical patients.

Understanding the physician's actions and their purpose is of particular importance in dissipating the strangeness of diagnostic and treatment procedures. No matter how familiar the instruments and the general techniques may be, the physician's program of action is likely to be unknown to the patient unless care is taken to inform him of it. The physician may be sure that when he fails to reveal his plans to the patient, the latter will develop his own conceptions which are often much worse than the actuality. This point has been emphasized by Benmosché (13). On the other hand, of course, if some distressing treatment which might cause worry or resistance on the part of the patient is being considered by the doctor, he may consider it best to keep the patient in ignorance of the prospect. Many doctors apparently solve the problem by adopting the general policy of informing the patient of as little as possible, and then only in general terms. This would appear to insure a general maximum of anxiety in patients, for most medical procedures are not in themselves sources of anxiety, but the unknown always is.

In this connection, the special significance to the patient of the time of occurrence of various measures should be mentioned. Manifestations of anxiety are related to the nearness of crucial events. If the patient does not know when these are likely to occur, the emotion will remain in an acute stage throughout the entire waiting period. If the schedule of measures is known, the patient's early manifestations of anxiety will be slight and will develop intensity only gradually. One of the authors, visiting a friend in a hospital, found him in a state of great anxiety because the doctor had just informed him that a cast would have to be changed "one of these times." A previous experience with this process had been very painful, and the patient was lying in a state of extreme tension listening for the footsteps of the returning doctor. Upon leaving, the friend met the doctor and told him of the patient's dread of the anticipated treatment. The doctor commented that the patient did not need to get upset yet, as the cast would not be changed for a least a week. When informed of this by his friend. the patient was pathetically grateful, remarking that he had wanted to ask the doctor when the change would be made, but could not bring himself to do so.

Here again it is not necessary to rely upon speculation. We know almost nothing of what the expectations of patients are as they approach the diagnostic and treatment situation. Romano (110) has made a beginning toward determining the meaning of medical problems to patients. The effects of different expectations upon their adjustment could be studied. It would be relatively easy to observe patients under two or more conditions of information. In one series, each patient first would be informed of the general method of examination and treatment to be used, and later of each step before it was carried out. In another series, patients would be given no such information. Intermediate series with different kinds of instruction could be used also. Observations of the reactions of patients and interviews before and after each procedure should go far toward disclosing the effects of each and the conditions under which it is desirable. One can foresee the day when physicians will be schooled in ways of informing patients of conditions confronting them in terms adapted to the comprehension and emotional needs of the individual.

An important illustration of the fact that medical situations are unknown, potentially dangerous, and therefore to be avoided is the difficulty experienced by laymen in selecting a physician when medical attention is needed. The dynamics of this situation are no different from those of any new situation; whichever choice the layman makes may be disastrous or advantageous to him. He has little possibility of surveying the situation and making an intelligently discriminating choice. In consequence, he remains in a state of conflict and postpones action until the pressure of illness forces it upon him. When he does act he is easily influenced by such unreliable cues as the suggestion of a nonmedical friend, the church or club membership of the doctor, etc.

Expense of medical care. One negative component of the diagnostic and treatment situation is the expense involved. So long as each visit to the doctor involves a new cash outlay, sometimes of unknown amount, the patient will balance his discomfort and the seriousness he attaches to his symptoms against the probable expense. This unquestionably operates to discourage early diagnosis of many conditions. It would seem clear that the adequate practice of preventive medicine and treatment of long-continuing diseases require the removal of this financial obstacle. Two ways of dealing with this problem have been proposed: one is prepaid medical care in which additional visits do not involve extra expense, and the other is some form of public medicine.

Probably of even greater importance as a source of resistance to securing medical care is the cost of illness in terms of wages and social status. Without doubt, this factor is often the largest negative component of the treatment situation. Many people prefer to die on the job with their social position intact rather than admit the need for medical attention which may require them to cease their occupational activity and jeopardize their financial and social security. Untold numbers of tubercular individuals and heart disease cases shorten their own lives and endanger the lives of others because they are unable to face the social consequences of serious illness.

These negative financial and social components not only restrain the patient, but also limit the conscientious physician in recommending expensive diagnostic and therapeutic measures. Rather than embarrass a sensitive patient for whom the expense is impossible, and charity is unacceptable if available, the physician is under great pressure to omit treatments which are medically desirable.

The cultural significance of the treatment situation. In addition to the discomfort, expense, and uncertainty of the therapeutic situation, illness has a social or cultural meaning which is also usually negative. To some extent, this meaning will differ with the cultural background of the individual. Miller (93), for example, reports that among Italian immigrants in New York City clinics and hospitals are avoided. She attributes this to the fact that in southern Italy and Sicily, where many of these people or their parents originated, a hospital is a "death house" to which only hopeless cases are taken.

Probably more widespread than such specific meanings of medical institutions is the stigmatizing significance of illness. Particularly among men illness is looked upon as a feminine characteristic to be shunned. The man who publicly announces that he does not know what it means to be sick thereby improves his masculine status. Related to this is the belief that illness is a sign of evil and a punishment for sin. As was indicated in the discussion of disabilities, this seems to be a widespread and deep conviction. In some religions, it is formally stated as a part of accepted doctrine. The strength of such attitudes in different segments of the population and the individual differences in their occurrence are not known but deserve investigation.

The removal of such culturally determined negative components of illness is a difficult problem, but one which must be resolved if medical therapy is to be optimally effective. Rather than admit the weakness or sin which they think sickness reveals, many people must be brought to their knees before accepting medical aid. To some extent, the spread of knowledge will tend to remove fears which are based on misunderstanding of modern medical practice. Undoubtedly this process could be hastened by systematic education through schools, newspapers, and radio. However, when illness is considered a sign of weakness or sin the problem is entirely different. The changing of such attitudes is a basic social psychological problem like changing food habits, or changing attitudes toward races and religions. It deserves the same sort of attention which these are receiving at the present time. Preventive medicine should recognize this as one of its main concerns.

This is a field for investigation in which techniques and materials for productive work are already available. Of especial importance would be comparative studies of experiences with medical programs in different cultures. For example, medical missionaries have been confronted with this problem in many diverse cultures; their procedures and their results could easily be described systematically. Likewise, the experiences of public health programs in different cultures and social classes in the United States are relevant. In Russia, experiences with different procedures and different ethnic groups are available for study.

Reducing pain. Without question one of the most important sources of the negative character of the diagnosis and treatment situation is the pain so often involved. Although much has been accomplished in the direct, physiological control of pain, much remains to be done. Furthermore, the elimination of sensitivity renders some medical procedures ineffective. There remains an important field for the development of psychological techniques for the control of pain.

Although this is primarily an area demanding research, enough has been achieved to indicate that important accomplishments are possible. One source of evidence for this expectation is the work on hypnosis (63). Another is found in common experiences and the rule-of-thumb procedures of patients and doctors. Some well known experiences and "tricks" are: keeping the patient's mind diverted, giving the patient control of the painful procedure ("I will stop whenever you say 'stop'"; a dentist is reported in the daily press to provide the patient with a switch whereby he can stop the drill at any time), inflicting a more intense but less dangerous pain (a child will bite his own arm when the other arm is being vaccinated), clenching the fists and 'setting' the jaw, yelling, complete unawareness of the pain of an injury sustained during the excitement of a game or battle. Such leads should suggest many systematic research possibilities which could be expected to lay the groundwork for applications in medical practice.

We have suggested some sources of the negative components of medical treatment. There are undoubtedly other sources of resistance to securing medical attention, and these deserve serious scientific consideration.

Diagnosis and Treatment to the Ill

When a person has accepted the fact that he is ill, diagnosis and treatment take on a different meaning.[18] They become the only means of regaining health. The attractiveness of such medical attention may still be negative because of discomfort and expense, but its meaning as the only route to health changes its dynamics, and consequently the patient's behavior. Under these circumstances the patient will frequently demand treatment, sometimes painful, serious, unnecessary, and even contraindicated treatments, and demand them quickly. In such cases, there sometimes arises the difficult medical problem of preventing the patient from overdoing treatments: taking too much medicine, restricting diet too greatly, exercising too strenuously. There is also the serious problem of when to deny further treatment to an insistent patient. It is necessary to understand that the denial of further treatment may be intolerable to a patient for whom a particular treatment is the only route to health he knows, and for whom illness is a social and financial as well as a physical catastrophe. It is in such circumstances that patients often turn to quacks, and it must be recognized that at these times quacks serve a highly imporant psychological function. One reason they are temporarily as "successful" as they are is because under these psychological conditions patients are under great pressure to secure remission of their symptoms, and are extremely suggestible. Hysterical mechanisms can undoubtedly operate to remove symptoms as well as to create them.

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[18] The situation as it exists for the ill person is represented in the figure on the following page.

Illness as a Refuge

Somewhat similar in its behavioral resultants is the situation in which illness is a refuge, and medical treatment serves as a route to this refuge.[19] This is a psychosomatic problem; both the physical symptoms and the seeking of medical treatment are efforts to avoid or cope with a dis-

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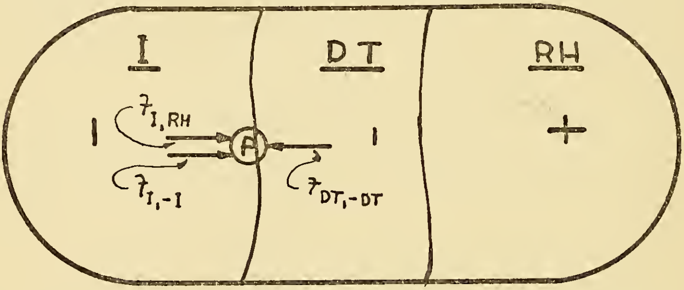
[18] *(continued)*



Situation of the Ill Person

I = Situation of ill person (negative valence)
DT = Diagnostic and treatment situation (negative valence)
RH = Situation of renewed health (positive valence)
$f_{I,\,RH}$ = force in I toward RH
$f_{I,\,-I}$ = force in I away from I
$f_{DT,\,-DT}$ = force in DT away from DT
P = Person

When the person has entered region I (illness), the region DT (diagnosis and treatment) usually becomes a route to RH (renewed health) as represented in the figure. Region DT may still be negative because of discomfort and expense. However, its meaning as the only route away from I toward RH changes the dynamics of the situation. Consequently, the behavior of the patient will change greatly too. While in this case there will also be a conflict depending on the strength of the negative aspect of DT, the forces away from I usually will be very strong and the resistance and conflict often will not be apparent.

[19] This situation is represented in the figure on the following page.

agreeable psychological situation. It undoubtedly requires psychiatric treatment. Hence, it is important to distinguish this from the somatopsychological problem in which the seeking of medical treatment is a reaction to the situation created by physical symptoms. Three differentiating criteria can be derived from the differing dynamics of these situations:

1) In the psychosomatic case symptoms will be magnified and the effects of therapy will be depreciated. In the somatopsychological case symptoms will be minimized and the effects of treatment will be exaggerated. 2) In the psychosomatic case the mood will be depressive and pessimistic. In the somatopsychological case, despite discomfort and ineffectual therapy, optimism and hope are likely to be present. 3) In the psychosomatic case symptoms will be variable; when one symptom is "cured", another quite different one will appear. In the somatopsychological case symptoms will be more constant and will be related to the real physical condition of the patient.

The Psychology of the Sick Person

When a person accepts the fact that he is sick, the psychological situation changes radically. We have already seen that in this event the

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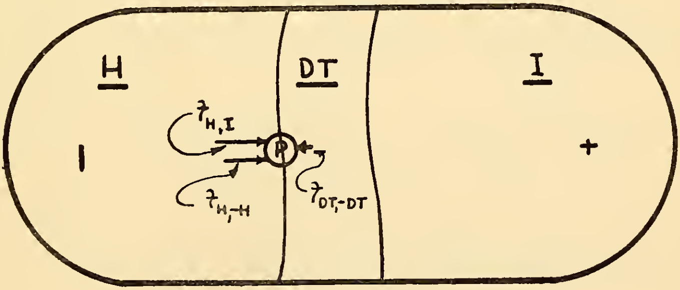
[19] *(continued)*



Illness As a Refuge

H = Healthy life situation (highly negative valence)
DT = Diagnostic and treatment situation (slightly negative valence)
I = Illness situation (positive valence)
$f_{H,I}$ = force from health to illness
$f_{H,-H}$ = force in H away from H
$f_{DT,-DT}$ = force in DT away from DT
P = Person

significance of treatment and diagnosis becomes markedly different from its significance when a person still considers himself healthy and only threatened with illness. Other changes occur also.

Reduced Scope of His World

Suddenly, with the onset of an illness, a number of situations which were previously highly important lose their potency. The person's world becomes small. While formerly such determiners of behavior as appointments with friends, business engagements, and family responsibilities were tremendously important, they now become ineffective in determining other than autistic behavior. The things which influence the overt behavior of a person become limited to the requirements of a few people (doctor, nurse, wife), physical conditions (position of light, softness of bed), and the demands of a few needs (for rest, physical comfort, absence of pain, food). In this respect, then, the sick person's world becomes remarkably like that of an infant, and the behavior resulting from these aspects of his situation is necessarily infantile, too.

Egocentricity

There are other respects in which the sick person's world approximates that of an infant. His social world becomes egocentric. The healthy adult lives in a plural psychological world; included in his own private one is the realization that others have private worlds which are largely independent of his. He has learned by hard experience that his needs do not directly determine the behavior of others and that their view of the world differs from his. When he becomes sick, however, the situation changes; he actually does become the center of a small egocentric world. The members of his family or the staff of the medical institution are devoted to him, i.e., they become more sensitive to his needs than they are to their own; they become, in reality, detached motor systems responding to his every need. Except for his illness, reality accommodates itself to the demands of the sick person much more than to the needs of the healthy. His behavior is less restrained by an independent reality, just as a child's behavior is unrestrained by a broad experience with hard and stubborn facts. In a small world like that of the provincial or the child, objectivity or the explanation of occurrences in terms of a wide context of relevant conditions is impossible. In such a small world, the person himself, his own physique, needs, and perceptions predominate in the totality of behavior determiners, and his social behavior and thinking are bound to be relatively more egocentric in consequence. His world is no longer plural, but singular and egocentric, exactly like that of an infant.

Internal Localization of Major Determiners of Behavior

As the ill person's world shrinks and the potency of externally located behavior determiners is reduced, internal determiners of behavior become more important. The healthy person is almost totally unaware of his own physiological processes, but the sick person often suffers pain and discomfort. Even minor variations in temperature, digestion, pulse, elimination, etc. are fraught with great significance and hence become the center of attention. In comparison with external events, these inward happenings are of paramount concern. Again, the situation is similar to that of the infant whose behavior is largely determined by proprioceptive and interoceptive stimuli.

Regressive Behavior of the Ill Person

Since the sick adult's situation is like that of an infant in these three respects—his world is small, it is egocentric, and internal behavior determiners have a dominant potency—infantile behavior of the following sorts is inevitable:

1. The person's interests will become relatively *narrow;* fewer stimuli will exist for him and he will respond, other than perceptually, to fewer of them. This follows from the reduced scope of his objective physical and social world and the great potency of a few internal stimuli. The sick person becomes "provincial," relative to his previous "cosmopolitanism". This behavior is both descriptively and dynamically regressive; ill persons are childish in behavior for the same reasons that children are.

2. The ill person will become relatively *dominating, intolerant* and *selfish.* To the degree that he lives in a small, highly egocentric world, he will be unable to appreciate the needs of others; his behavior will be determined by his own needs to the exclusion of others. Instances in which invalids almost completely usurp the lives of those devoted to them are well known. This is often done by subtle and polite means; weakness and helplessness, in themselves, give the sick person a great power over those who care for him.

3. At certain stages in his illness, the patient will become *apathetic* and *disinterested,* as has been pointed out by a number of writers (10, 137). Such behavior is fostered by a small, devoted world which does not require the patient to accommodate himself to the demands of a diverse and often contradictory reality.

4. The ill person will become *dependent* and *insecure.* Paradoxically, along with domination, intolerance, and selfishness go dependence,

insecurity, and fearfulness. It has often been pointed out that the dictator who lives by using others for his own ends necessarily becomes dependent upon them, and within limits, is coerced by them. He has simultaneously a position of great power and one of extreme weakness. The sick person is no exception to this rule. The combination of dominance and dependence places him in a difficult conflict. On the one hand he is grateful to his benefactors; and at the same time, he is resentful of his subordinate relation to them. In this respect, too, his behavior is not unlike that of a child who loves his parents for being good to him, and hates them because he is so helpless without them and so easily coerced by them.

5. The ill person will become *hypochondriacal.* The things which are of paramount concern to him are intensely personal—the things which happen within his own body and the routines that administer to his physical welfare. While previously he might have considered the rise or fall of the stock market or the passage of a bill in Congress as of great importance for his future, now these virtually cease to exist for him. Their place is taken by the rise and fall of his temperature, or the administration of a hypodermic injection. Under these circumstances, the individual inevitably becomes the center of his own attention. His thought, conversation, and preoccupations deal with his own symptoms. This, again, is retrogressive behavior.

Clothier (24) who has brilliantly described regressive behavior following surgery essentially agrees with this analysis, although her discussion is in terms of psychoanalytical concepts. Deutsch (33) notes that operations performed in adulthood often have behavioral consequences similar to earlier ones experienced in childhood. A sensitive account of personal experiences during a long illness which illustrates a number of the mechanisms described here has been written by Brown (20).

The Psychology of Convalescence

It is important to note that regressive tendencies are inevitable in acute illness. Since it is psychologically true that the situation becomes infantile, behavior must become infantile, also. Probably this is therapeutically beneficial during acute stages of illness. However, difficulties arise in cases of prolonged chronic illness and slow convalescence. Although physical convalescence is often an automatic process, the psychological side of convalescence, i.e., reversal of regressive behavioral tendencies, is not. Romano (110) and Liss (79) emphasize this aspect of convalescence and discuss ways of dealing with it. A number of procedures discussed in later sections on reconditioning (p. 257) and occupational therapy (p. 263) are directed at these problems.

There are several possible procedures for aiding psychological recovery following physical illness. To some degree the staff of the medical institution, or the family of the patient in the home, can control his psychological situation. They can enlarge his world by seeing that he has visitors, a radio, vocational decisions, and opportunity for activities within the limits of his physical strength. They can reduce the egocentricity of the patient's social world by giving him more and more responsibility for his own care. The importance of his physical condition and the routines connected with treatment may be reduced by making them appear incidental to other aspects of living. Accomplishment of these ends is an important purpose of reconditioning, physical therapy, and occupational therapy programs.

However, it must be recognized that these changes cannot be forced upon a patient from the outside; they can only be encouraged. Every person who has experienced long illness and slow convalescence will have some motivation for clinging to the simple, secure world in which he has been dominant. The problem which faces him is in many respects like that which faces the adolescent. Just as the latter wants adult freedoms, the convalescent wants to return to the satisfactions and freedom of the healthy. On the other hand, the world of the healthy adult now seems new and strange and the convalescent is filled with the conflicts and resistance which are felt by anyone entering an important new situation. The pressures to cling to the familiar and safe, though unadventurous, life of the invalid are unavoidably strong, just as the pressures upon the adolescent to cling to his childhood role are strong. In both cases, some do not make the transition.

The reverse problem, the person who insists upon leaving the sheltered life before he is able to cope with the demands of the normal adult world, is also well known, as it is in adolescence. If adolescence is any guide one would expect such "rebellion" to occur in cases of both "overprotection" where the person experiences very little freedom from the attention of those devoted to him, and "rejection" where he does not receive the attention he needs.

Those who are close to a person during this transition should realize that it is essentially a growth process that occurs within the patient. It is inevitably a time of conflict and emotionality for him, and he needs the utmost understanding and encouragement. It would appear that many lessons might be learned from the experience of those who deal with adolescents. People who are convalescing especially need opportunity to engage in "healthy" activities which will give basic satisfactions before they can be achieved in the unprotected world of healthy persons.

This means that activities connected with life aspirations are required; the satisfactions, responsibilities, and self-esteem which come from successful beginnings will strengthen the individual and help him to face the world.

Persisting Effects of Acute Illness

A number of studies relate subsequent behavior to a history of acute illness. Lindeman (78) investigated the behavioral sequelae of major abdominal operations in 40 women 20 to 55 years old. These cases were selected from a larger series on the basis of absence of previous severe neurotic or psychotic symptoms and absence of postoperative somatic complications. The women were interviewed immediately preceding the operation and again 12 to 18 months later. In 25 cases there was no change in psychiatric status. In 13 cases restlessness, sleeplessness, agitation, and preoccupation with depressive thought began 3 to 4 weeks after the operation and lasted more than 3 months. The incidence of these behavior symptoms was higher in cases of pelvic operations and in persons with a history of mild depressive episodes, but was not related to the occurrence of preoperative anxiety. There is considerable general literature on postoperative psychoses (1, 25, 38, 39, 91, 97, 125, 132).

Hardy (54, 55) studied the relation between frequency of illness and behavior adjustment in a representative group of several hundred children in an urban community over a 13-year period from childhood (ages 6–9) to early maturity (19–22). Data on illnesses were obtained by a pediatrician in annual examinations. Behavior adjustment was determined by teachers' ratings in childhood, by the Thurstone Personality Schedule in adolescence, and by the Bell Adjustment Inventory at maturity. Comparison of the [approximately 15%] best adjusted and poorest adjusted children yielded the following results:

	Well adjusted		*Poorly adjusted*
Number of cases	62		51
Mean number of illnesses reported	6.3		5.3
Difference in means ÷ S.D. difference		2.5	
Percentage reporting 1–3 illnesses	11		24
Physician's rating of current physical condition	robust, vigorous health		distinctly less robust health
Physician's rating of freedom from remedial defects	very few defects		more defects

From these data the author concludes that children rated by teachers as poorly adjusted have histories of less frequent illness than well adjusted children, but poorer current health and physical condition. In adolescence and maturity, however, evidence that a behavioral advantage accrues to those with a history of recurrent illness is lacking. When subjects with a history of much illness (8 or more episodes) were compared with those with little illness (3 or fewer episodes), there was no difference in their median scores on either the Thurstone or Bell schedules. The general conclusion of the author is that relatively frequent experience of the illness situation during childhood is not a significant handicap in personality development. Possible sources of error in this study are: 1) inadequacy of diagnosis of adjustment since teachers may tend to rate quiet, listless children as well adjusted (the author believes this is not the case in this study); 2) devoted mothers may report illnesses more completely and have "better adjusted" children according to teachers' estimates than less devoted mothers. Both these factors would operate to reduce the apparency of any unfavorable effects of illness upon behavior.

Ackerly (2) compared the health histories of 30 delinquent children and a control group of 30 nondelinquent siblings. Among the delinquents there were 12 with poor health histories, compared with 4 in the control group.

In a study of normal and psychotic women Landis et al. (73) found that the proportions of those with a history of good health in childhood and those with a history of "below average" health differed on the two following items:

	Childhood health	
	Good	*Below average*
Extreme psychosexual immaturity	14%	43%
Emotionally dependent upon family	5%	14%

McKinney (86) found that 17% of college men rated as well adjusted by their housemates had a history of serious illness compared with 30.5% of those rated as less well adjusted.

Ellis (41) reported that at least 10% of a group of eminent British persons had suffered from a marked degree of ill health, amounting to more than minor discomfort during their active years. Miles and Wolfe (90) thoroughly investigated the childhood health histories of 50 geniuses for whom most adequate data were available and found that 30% were invalids, had chronic ill health, or were frail in childhood and early adolescence. However, their average rating of the childhood health of these geniuses was "average", and they question whether the health of this group differed from that of people in general.

Stratton (128, 129) had college students rate the intensity of their emotional reactions to situations commonly provoking fear and anger, and compared the ratings of 1,348 students who had records of at least one of the following ailments with those of 527 students who had no such record: appendicitis, asthma, Bright's disease, constipation, diphtheria, encephalitis, headache, heart trouble, poliomyelitis, influenza, malaria, meningitis, neurasthenia, pleurisy, pneumonia, rheumatism, scarlet fever, smallpox, St. Vitus dance, tonsilitis, tuberculosis, and typhoid fever. Women with records of ailments reported slightly more intense fear and anger reactions than women without; the critical ratios of the differences were 3.66 and 8.19, respectively. Men with records of illness reported more intense anger reactions (C.R. 5.80), but there was no difference in the intensity of their fear reactions and those of the other men.

McNemar and Landis (88) administered the Willoughby Emotional Maturity Scale to 65 psychopathic women and related their scores on this instrument to the incidence of somatic disease in their health histories. Although the correlations were not statistically significant, they were all positive and suggest a slight tendency for greater emotional maturity to be associated with infrequent disease.

On the basis of information supplied by parents Smith (122) found that children with a history of severe illness before the age of 24 months were retarded from 2 to 60 days, on the average, in the development of the following abilities: holding head up, sitting up, creeping, use of words, walking, use of phrases.

The Social Psychology of Hospital Organization

The social-psychological situation of many ill persons is affected in important ways by the subculture of the hospital. There are many indications that the great expansion of hospitalization in recent years will continue with the extension of health insurance and state medicine. If this is true, the social psychology of hospital operation will undoubtedly increase in importance.

Some general aspects of this problem have been mentioned in discussion of the psychology of illness and of diagnosis and treatment, and other points have been covered in connection with particular diseases and disabilities. Here we shall review a considerable number of studies of the general problem. It should be noted that there is also a great amount of purely speculative, and often polemical, writing. Although this body of literature does not advance our knowledge greatly, it does reveal a wide interest in the problems involved, and representative examples of such writings are included in the bibliography (3, 17, 31, 35, 44, 45, 46, 51, 64, 87, 89, 103, 115, 126, 140, 141).

Reactions of Children to Hospital Experience

A great proportion of the work on the social psychology of hospital operation has been done with children. Without doubt, similar problems exist for adults, and similar methods of studying them are applicable.

In a study entitled *Separation Anxiety in Young Children* (40), Edelston raises the question of causation of behavior disorders following illness in children. He mentions two common explanations: 1) the illness itself, by lowering the vitality of the child, in some way disturbs the mental balance and makes for neuroses; 2) the special attention received from adults during illness is gratifying to the child, and the subsequent neurotic behavior represents his efforts to retain this gain from his illness. Edelston presents 42 cases of disturbed children, previously hospitalized for physical illness, and on the basis of their cases concludes that the two explanations noted are inadequate. Alternatively, he advances the view that the behavior disturbances frequently become intelligible as exhibitions of anxiety at being removed from the familiar, secure, and affectionate home situation, and placed in a strange, fearsome, and impersonal hospital situation. Edelston identifies three phases in this reaction: 1) an emotional upheaval at being taken away from home and an initial period of disturbed behavior in the hospital; 2) the later hospital period when the child settles down and seems to accommodate himself to his new surroundings; 3) behavior on returning home, usually after a latent period, in which the child acts as if he now feels the need to reassure himself of his mother's continued love, and has to try out all his hostile impulses to test her affection for him.

The divergent practical results of Edelston's view of these behavior disorders and the views he opposes are illustrated in the controversy over parents' visits to their hospitalized children. As representative of the viewpoint he opposes Edelston quotes, in part as follows, from an editorial in *Lancet,* commenting on the decision of the Ayr County Council to stop visiting in the children's hospital:

> The psychological and emotional effects of visiting are as important as those due to infection. Anyone who has worked in such a [Children's] ward knows how often the child settles down a few days after admis-

> sion only to be upset again and again by the parents' visits. It is a fact to be faced by all parents, that with few exceptions no child mopes in a children's ward, and in a few days the young child at any rate cheerfully adopts the nursing and medical staff *in loco parentis.* The child does not need visitors in the same way as does the adult patient, and this means any visiting . . . is for the benefit of the parents rather than the patients.
>
> Some will call the policy of exclusion hard hearted, more especially those who know least about the child's mind and how it works in a hospital; but infection in a children's ward can be devastating and deadly, and sentiment is not enough to set this risk aside.

Edelston comments upon this editorial as follows: "In this matter . . . I find the parental instinct much sounder than medical knowledge and judgment."

This investigation has all the familiar shortcomings of a clinical study: poor isolation of variables, and selection of cases. These difficulties are recognized by the author, and he urges more precise investigations along the following lines:

1. What proportions of children are affected by hospital experiences and to what extent?
2. What kind of children are affected (age, character)?
3. What factors in the hospital situation are important (length of stay, amount and variety of visiting)?
4. Specific behavior resulting from hospitalization with special reference to warnings of later psychological difficulties for the child, e.g., refusal to talk about his experiences or include them in this play.

Shirley and Poyntz (118, 119) studied the emotional reactions of children 2 to 6 years old during day-long visits to a medical research clinic during which they were subjected to a variety of measurements and diagnostic procedures. They found that evidences of emotional upset declined with increasing age. At 2 years of age virtually all children reacted emotionally to X-ray, dental, orthopedic, and pediatric examinations. At 3½, 48% of the boys and 36% of the girls failed to adjust completely to the clinic situation. At 6, after a number of similar experiences at 6-month intervals, 20% to 30% of the children reacted emotionally. At all ages boys were more emotional than girls. The authors conclude that separation from parents for medical examinations arouses anxiety in an appreciable number of preschool children.

Levy (76) reviewed the records of 124 children aged 2 to 9 who had undergone an operative procedure at some time and been referred to a psychiatrist for behavior problems. Information from the parents revealed that there had been emotional sequelae following operations in 20% of these cases. The occurrence of postoperative emotional disturbance decreased in frequency with increasing age at time of operation. The emotional behavior often took the form of night terrors with the younger children and of negativistic behavior with the older. The author attributes the greater emotional hazard for the younger children to their greater sensitivity to pain, their poorer comprehension, their greater dependence, and the greater strangeness of outside contacts. Half of the emotionally disturbed children had no history of behavior difficulties preceding the operation. Case studies of children showing no untoward emotionality following operations indicated that they had been told the reason for the operation and how it would be performed, they were taken to the hospital by a parent, had been anesthetized or given sedatives in the bedroom, and were greeted by a parent after the operation. These children were spared being tricked into the hospital, being wheeled down the corridor, struggling against the anesthetic, seeing weird instruments, the white surgical room and strangely dressed technicians. Levy proposes the following as preventives for unfortunate resultants of operations: 1) postponement of the operation if possible until the age of 3 years, 2) explanation of what is to take place, 3) contact with parent before and after the operation, 4) preparatory sedative or anesthetic in the bedroom. "In principle the operative procedure should be divested as far as possible of the strange, the frightening, the unfamiliar."

The remaining publications present discussions of children's reactions to the hospital and are based upon general observations of the authors; data are not presented. Jackson (61) stresses the potentially traumatic nature of the hospital experience for children, as does Vincent (131), and suggests that avoidance of psychological trauma should be a major concern of every adult in contact with hospitalized children. She states that unfortunately the behavior of many nurses and doctors only exaggerates the child's natural anxiety. Jackson rejects the argument that because many children accept the hospital routine with seeming serenity, the hospital situation therefore does them no harm. She believes this is an example of the error of interpreting silence on a subject as an indication of its unimportance, and illustrates these points with cases.

Beverly (14) likewise deplores the effect of common hospital routines and parent attitudes upon the fears of hospitalized children. He reports that about 90% of cardiac and diabetic children at Children's Memorial Hospital in Chicago responded to the question, "Why do children get sick?" with answers meaning "Because they are bad." With this basic conviction of sin, hospitalization, treatments and operations are easily interpreted as punishments. He suggests counteracting these fears and guilt feelings by familiarizing the child with the operating room the day before the operation, acquainting him with children who have had operations, and administering anesthetics in bed. Such procedures are now successfully used in certain hospitals.

Pearson (105) presents 11 cases illustrating the thesis that operations on children produce emotional shocks and therefore should be performed only when absolutely necessary. The degree of shock to the nonneurotic child may be lessened by explaining in detail before the operation what will be done and how he will feel as a result, and by giving the child an opportunity to express his emotional reactions to the operation both before and after it has taken place.

English and Pearson (42) suggest two sources of neurotic behavior following illness: the child's effort to retain the advantages which his oversolicitous parents have provided during his illness and convalescence by means of demanding and aggressive behavior (the view against which Edelston protests); and the absence of a feeling of guilt. The child who has suffered pain through no fault of his own considers, in effect, that he has been punished without committing any crime, and should therefore have license to commit crimes without punishment.

Schwartz (116) and Rohret (108) deplore the tendency to insist on institutional care for sick children; they recommend that some of the expense of hospitalization might better be devoted to improving home care.

Forsyth (47) believes that children frequently consider their illness to be a punishment, that it intensifies the fear of death, that surgical operations frequently lead to mistrust of parents and doctors and leave children terrified, and that a number of aggressive or withdrawing behavior reactions may result.

Kanner and Lachman (67), Barraclough (10), Minski (94) and Crothers (29) take a less serious view of the effects of illness and hospitalization upon children. Barraclough and Minski consider the hospital a better emotional climate for the child than most home situations. In the hospital ward, according to Barraclough, "The patient is surrounded by an atmosphere of neutrality. It is a calm, matter-of-fact and unemotional environment. . . . No undue stress is permitted to be attached to minor complains and demands, and the child is unconsciously led to assume his proper place in his little community." This neutral emotional climate is difficult to maintain at home, so that unfavorable influences are common there and behavior deviations following illness are frequent. These deviations are not a necessary result of illness and hospitalization, but are due to the emotional behavior so frequently exhibited by parents. Kanner and Lachman propound a similar view, illustrated by case history examples.

The solution of this controversy over the effects of illness and hospitalization upon children is of both practical and theoretical interest. The existence of the controversy is traceable partly to quite different assumptions as to the basic nature of children, and partly to the lack of adequate data on the behavior of ill and hospitalized children. In general, it may be stated that writers with a Freudian background take a serious view of the effects of illness and hospitalization, while others tend to take a less serious view. Information on the behavior of children evacuated from their homes and separated from their parents in wartime should be particularly relevant to this controversy. The data supplied by Freud and Burlingham (48) strongly support the conclusions reached by Edelston.

Programs of Medical Institutions

Huschka and Ogden (59) studied the procedures of a pediatric clinic with a view to reducing the anxiety of the patients. On the basis of observations of the children's behavior in the clinic, the following changes in procedure were made and found valuable:

1. The admitting physician adopted the policy of being especially understanding, of avoiding all use of physical restraint, and of using the tongue depressor skillfully. This initial experience was found to be very important in determining the emotional "set" of the child in all subsequent clinic situations.
2. Appointments were carefully arranged so that waiting time was reduced. This decreased crowding, commotion, excitement, and fatigue, and definitely improved the clinic atmosphere.
3. An especially inviting playroom was installed with a recreational aide in charge. This helped to establish a pleasant association.
4. Any overtly disturbed child was sent immediately to the psychiatrist who tried to quiet him; if unsuccessful, the child was taken to the treatment room at once, the case being considered a psychological emergency.
5. Apparatus was kept covered as much as possible.
6. The parent was allowed to remain with the child except when so anxious himself that he disturbed the child. Routine exclusion of the

parent was tried at first, but was abandoned on the ground that mere separation from the parent caused anxiety in addition to the child's fear of injury.

7. Procedures were explained to children over 4 years of age and to parents. Suddenness of presentation and lack of preparation were found to increase emotionality.

8. Strict truthfulness with the child about the possibility of pain was followed at all times, for deception both decreased the child's confidence in those previously trusted and increased his insecurity in the treatment situation.

9. Physical restraint of babies was reduced to a minimum. All preparation was made beforehand. The parent never was permitted to participate in holding a child since anything that jeopardized a constructive parent-child relation was contra-indicated.

10. Injections in the buttocks were avoided because this is the area where the child feels most sharply threatened.

11. Upon completion of treatment, the child was given immediate freedom.

12. At that time, also, the physician spent a few minutes reassuring the child of his friendliness.

13. On leaving treatment rooms, young children were immediately taken to the playroom. This helped them to understand the clinic as a place primarily concerned with their well-being. It also had an excellent effect on the general atmosphere of the clinic for it reduced the amount of crying set off by suggestion.

The question of the most desirable number of injections per visit remained unsettled.

Hattwick (56) reports the following results from observations of the behavior of nurses in the children's ward of a hospital; the children were 1½ to 8½ years old, and the observations were made between 9 A.M. and 12 noon:

Average number of contacts per child initiated by nurses in 3-hour period	4
Ratio of medical contacts to social contacts	3:1
Resistance and self-help:	
Number of situations where self-help was permitted	237
% in which resistance occurred	3
Number of cases of resistance on part of child	86
% in which self-help was allowed	8

Remarks of nurses:	
% negative commands (e.g. "Don't jump like that")	25
% expressions of criticism or scolding	10
% expressions of approval	2
Social contacts of nurses (25% of total):	
% providing play material	44
% fondling and caressing	31
% play with children	20

The author interprets these results as meaning that nurses should be alert to opportunities for increasing self-help on the part of children. She believes that the commonly expressed view that it is easier for the nurse to wait on the child is false. She cites as evidence a hospital where the children did most of the routine jobs themselves, thereby saving much time for the nurses. The author believes also that provision of more play material, leaving the child free to use it in his own way, is desirable for the children and for the hospital, too.

A considerable number of publications describe nonmedical programs in various hospitals. The following are representative:

Smith in a practical book *Play for Convalescent Children* (120) describes in detail the extensive play program followed over a period of years at Children's Memorial Hospital, Chicago. Both the children and the staff are reported as benefiting greatly from this program which especially emphasizes group play with the nurses and other staff members participating. Of particular interest are the chapters on use of play before surgical operations, and on instruction of student nurses and parents in play techniques. Ketcham (69) has described in great detail the nonmedical program for children at the University of Michigan Hospital. She makes a strong case for the importance and practicability of attending to the social, educational, and emotional needs of hospitalized children.

Griffin, Hawke and Barraclough (53) describe an attempt to reduce the seriousness of the psychological factors affecting a group of children paralyzed from infantile paralysis. A special hospital unit was set up to provide a three weeks' program to accustom and train the young patients and their parents in the care which would have to be continued for many months. Included were 283 patients from 2 to 18 years of age. The mothers were given a two- to three-day course. Except for a two-hour rest period, the children's time was completely occupied with music, reading, moving pictures, educational activities, arts and crafts, and therapeutic interviews. It is reported that the hospital was a very cheery place with shouting, laughter, and singing heard at all times. As a result a spirit of helpfulness and willingness to learn became general. The visiting teachers reported that they had never taught a more enthusiastic and interested group of children.

Neustadt (100), Clark (23), Cameron (22), Weinmann (135), Miller (92), Rand (106), and Binner (16) describe varying educational programs for hospitalized children and adults. Matheison (85) presents a comprehensive survey of hospital schools in the United States. One can see the possibility of productive research by comparing the psychological and medical results in hospitals with and without such programs. At present we have only the impressions of participants concerning the effectiveness of such programs.

Doctor-Patient Relations

Related to the psychology of the ill person and of diagnosis and treatment is the problem of doctor-patient relations (cf. pp. 229 ff., 239 ff.). We have found few studies of this problem, although the literature on medical practice includes considerable speculative material on the importance of these relations and some good advice as to what constitutes a desirable approach to the patient. This is the field of medicine in which "art" has full sway. There is reason to believe, however, that the era of instinct and good intentions in this area may be drawing to a close. For one thing, psychological techniques are available for determining patients' attitudes and reactions to physicians' behavior. For another, psychiatric training and an appreciation on the part of general practitioners of the great frequency with which psychological problems are disguised by physical symptoms, are becoming widespread (37). These factors may be expected to lead to a more scientific interest in techniques of handling patients. Furthermore, with the extension of various forms of socialized medicine in which laymen share authority with physicians on policy-making boards, the patient's viewpoint may be expressed more forcefully than hitherto. A sound beginning has already been made on some aspects of the problem in the case of child patients, as has been noted.

One study of relations between doctor and adult patients has been made. Romano (109) analyzed the behavior of 100 unselected patients before, during, and after their participation as cases on ward rounds. He offers evidence to support the conclusion that this experience is not a severe emotional trauma to the patient, and that it can have psychotherapeutic value for patients whose illness includes psychological factors in the etiology. Romano stresses the importance of the preliminary conference with the patient to prepare him for the experience, and to eliminate neurotic patients who might be disturbed. Suggestions for the conduct of ward rounds are made, such as care in disrobing the patient and in reporting personal facts which might be embarrassing. A vocabulary test of medical terms given to some of the patients indicated that most of the technical terminology was not understood, or was misunderstood very generally. The value of discussing some cases in lay terms before some of the patients is considered. This research amply demonstrates the possibilities in scientific investigation of many aspects of doctor-patient relations.

Kahn and Powers (66) in a general discussion of bedside teaching warn against the dangers to the patient in a number of common practices in medical schools.

In *The Psychological Aspects of Dental Treatmest of Children* (12), Bell reports a study of 93 children aged 3 to 8 who were observed while fillings and extractions were made. The intention was "to examine the various components of the treatment situation in order to obtain insight regarding the dentist-child-parent relationship; to examine methods and procedures used by dentists and the reactions of children to dental treatment; to find what approaches are desirable; and to explore the parents' reactions to the treatment for their children." Detailed running accounts of the behavior of the children and the dentists were made. Children were interviewed before and after treatment, the dentists' records of the treatments were obtained, and the parents of the children were interviewed. The results may be summarized under the following headings.

1. *Behavior of children during treatment.* The total number of units of behavior observed was 9,917. These were classified in six categories giving the following percentage distribution:

Expressions of pain	12
Apprehensive behavior	4
Rebellious behavior	4
Submissive, complaint behavior	32
Expressions of approval and pride	8
Accessory body movements and "small talk"	40
Total	100

In general, the picture is one of docility. No age or sex difference was found.

2. *Behavior of dentists during treatment.* Of the 11,366 units of behavior observed, 41% were classified as behavior directly concerned with preparation for treatment and application of instruments, and 59% as "nontreatment" behavior. Of the latter, 85% were classified as en rapport with the child (informing, entertaining, praising, etc.), and 15% as not en rapport (coaxing, tricking, threatening).

The author concludes that dentists spend most of the time a child is in the chair in nontreatment contacts. These are predominantly cooperative and pleasant, although great differences were found between dentists and between clinics. The author believes that the total situation is more important for the child than the particular actions of the dentist. Thus, in some clinics the chair was in the waiting-play room where the parents were allowed to remain; in others, the child was alone with the dentist in purely technical surroundings. In some clinics, there was a single dentist, well known to the child; in others, there were a number of dentists, often complete strangers to him.

3. *Relationships between dentist and child.* There was no tendency for dentists to increase their rapport when they increased the frequency of applying instruments. There was a positive correlation between the frequency with which the dentist informed the child about the treatment planned, and the behavior of the child which was en rapport. There was a similarly positive correlation between the frequency of friendly, approving behavior on the part of the dentist, and friendly responses from the child. The child's "non-rapport" behavior increased with the length of treatment. The dentists kept the 3-year-old children in the chair longest, and exhibited more "non-rapport" behavior toward them than toward the older children.

This pioneer study of dentist-child behavior demonstrates the excellent opportunities afforded by dental clinics for psychological investigations. Future studies can profit from this initial investigation by concentrating upon more limited objectives and using less atomistic techniques.

At the present time, there is little agreement as to what constitutes good procedure on the part of different practitioners of the "art" of medicine. As an example, we may cite Benmosché's book, *A Surgeon Explains to the Layman* (13), and the reaction to it. The author explains that he belongs to the school which believes that "it can do nothing but good to have a thorough understanding of yourself. If left in the dark, the human mind can always manufacture much worse things than actually exist in nature. . . . We fear what we don't understand, and so most people are terrified by the simplest operation." Hence, the procedures used in various common operations are described in nontechnical terms. In a review of the book, another surgeon dismissed it with the statement, "The reviewer is one of the group which believes the average patient should know as little as possible."

This is an example of disagreements on procedure which have wide ramifications but are readily subject to investigation. Merely to know common impressions of treatment procedures would provide some basis for guiding the "art" of medicine, for it would probably be agreed that when the patient's anticipations are more terrifying than the actuality, he should be enlightened. Among the many problems in this field now amenable to investigation are:

Reception room arrangements
Interview techniques
Physical examination procedures
Presurgical preparation
Administering of painful treatments
Motivation of long-continued treatments
How much, and how to inform the patient
Overcoming fear
Overcoming false impressions
Aiding patients to make difficult decisions

Reconditioning Programs

In recent years there has been extensive discussion of the importance of convalescent care and treatment, and the lack of adequate facilities for it (5, 27, 30, 52, 70, 138). In 1933 the British Medical Association appointed a committee to consider the existing arrangements for treatment of fractures. The committee found that the periods of incapacity for cases treated in organized clinics, with continuous and intensive after-care, were markedly shorter than for cases treated by ordinary methods in unorganized clinics. The following data are given in the committee's report (153):

	Average no. of weeks of disability	
	Organized clinic	*Unorganized clinic*
Coles fracture	7	29
Fracture of saphoid of wrist	11	46
Fracture of clavicle	5	22
Fracture of femur	37	60

In 1937 a joint committee of the British Medical Association and the Trades Union Congress reported (151) that in England there were inadequate provisions for active rehabilitation measures in bone and joint cases after the period of immobilization, and without such measures the initial treatment was of greatly diminished value. The committee recommended the establishment of centers "where physical and mental redevelopment can be achieved by games, by activities in the gymnasium, and the swimming pool, and by graduated work." Nicoll (101) describes such a center for miners, consisting of a modernized country mansion, with most patients in residence. Treatment is intensive and individual, and involves graduated remedial exercises, occupational therapy, physical therapy, and games. "Perhaps the most important of all is the daily and hourly preaching of the gospel of rehabilitation—that recovery can only come from unremitting hard work of the patient by himself."

The plans for rehabilitation of industrial accident cases made in Britain before the war were continued in the army program, where the psychological aspect was stressed even more strongly. Watson-Jones (134) reports that the first two years of rehabilitation experience in the R.A.F. amply proved the value of these plans, and even that reconditioning should begin in the hospital wards with bedfast patients. In the R.A.F. every patient had at least one special exercise to perform, and this had to be repeated every hour. Rehabilitation did not begin with recreation and games: it began with hard work. To accomplish this, rehabilitation orderlies were posted in every ward where their most important duty was to teach each patient his specific exercise and see that it was repeated properly.

For the ambulant patient not requiring special medical treatment, a new set-up was found necessary, providing space, recreation facilities, and, especially, removal from the hospital routine. Watson-Jones states, "The man who has been in bed for many weeks, asking for this, ordering that, and commanding the other, becomes the king of a little universe that revolves around him. Here lies the germ of invalidism. Both discipline and a new mode of life are necessary." For this reason great care was taken to see that the rehabilitation center did not become another hospital. The whole life of the patient was controlled and this was found to be possible only when sleeping quarters, recreation rooms, gymnasium, playing fields, and swimming pool were included in a compact self-contained unit. It is stated that a large gymnasium was found to be especially important, for many exercises had to be possible simultaneously. The massage cubicles and doctors' offices opened directly from the gymnasium, or were situated in it. An intervening corridor was found to be unfortunate as it encouraged the impression that treatment and exercises were independent. The regimen of devoting mornings to work in the gymnasium and afternoons to outdoor activities was not considered desirable, as it encouraged the belief that the day finished at lunch time. The doctor was instructed to work actively beside the patient in the gymnasium, spending one-half to several hours with one patient. One doctor would handle, at most, 50 cases. Occupational and physical therapy were found to be of limited value. Watson-Jones declares that the correct psychological atmosphere was of fundamental importance; without it, a rehabilitation center was almost worse than none at all.

It is evident from this account and others (57, 84, 114, 136, 139) that the psychological significance of hospital architecture and routines is a primary consideration in the reconditioning program. This represents a major shift from previous medical emphasis upon the purely physical side of treatment.

The reconditioning program in American Army hospitals differs from the British program in certain details, but it represents a similar radical shift from an emphasis on medical routines with almost complete laissez-faire for the patient during nontreatment hours. Every hour not devoted to medical treatment is almost completely filled with scheduled physical exercises, educational classes, and occupational and physical therapy. The differences in the programs of the various American services are relatively minor, and not all of them will be considered here. The American program is based upon recent medical experience which brings into question the therapeutic value of complete bed rest in a large number of medical and surgical as well as orthopedic conditions. Karpovich, Starr, and Weiss (68), for example, report beneficial results from the introduction of a physical exercise program in the treatment of atypical pneumonia. Sears and Starr (117), Dock (36), and Ghormley (49) also discuss medical aspects of bed rest. It should be noted that the new developments have not occurred without opposition and criticism. Balme (9) sees the widespread development and application of reconditioning procedures as somewhat premature. He thinks the problems of kinds of exercises and times of application require much more research. Woods (139) questions the tendency to decry the value of so-called passive exercise in favor of almost complete dependence on active participation by the patient.

In general, the American reconditioning program appears to place relatively less emphasis upon physical exercise, and relatively more upon the psychological, educational, and recreational aspects. Colonel Thorndike, Chief of the Reconditioning Division, Office of the Surgeon General (130), defines the reconditioning program inaugurated in February, 1943, as "planned convalescent care" accomplished by the "scientific scheduling of a program of mental and physical restoration according to the needs and ability of each individual patient." The program has four phases: 1) The physical was designed to allay the deteriorating effects of recumbency in bed, and later to strengthen and harden the ambulatory patient. 2) The educational was designed to effect orientation to personal problems incident to illness, to instill the will to fight in those who would return to duty, and to explore and develop interests and talents through class and individual study. 3) The orientation phase was designed to aid the soldier returning from overseas in adjusting to home life, and to counteract the feeling of detachment from identity with an Army unit, both being accomplished mainly through lectures and group discussions. 4) Occupational therapy was included for both its diversional and functional (physical) benefits. This program has been discussed by Briscoe (19), Dittrick (34), Huddleston (58) Lueth (82), and Lemere (75). The Navy program is described in an official bulletin (152). Layman (74) describes the psychologist's place in the reconditioning program of a general hospital.

The Army Air Forces Convalescent Rehabilitation Training Program was inaugurated earlier than the programs of the other services. A short summary of two years' experience with this program, published in December, 1944 (113), reported that hospital re-admissions had been reduced as much as 25%; and that the period of convalescence in certain acute, infectious and contagious diseases had been reduced 30–40%. One hospital reported a reduction from 18 to 11 days for patients with measles and a drop from 33 to 23 days for convalescents with scarlet fever. A study of 645 cases of primary atypical pneumonia, comparing two parallel groups, revealed that the group permitted to convalesce in the routine manner averaged 45 days of hospitalization with a 30% recurrence rate, while the group that participated in the Convalescent Training Program averaged 31 days of hospitalization with a recurrence rate of only 3%. The A.A.F. publications for patients in the program are especially noteworthy (142, 143, 147, 156). The "catalogue" of one center listed 72 classes open to students, in addition to the Armed Forces Institute correspondence courses. The place of psychologists in this program is discussed briefly by Gillman and Ramsey (50).

Mueller and Silverman (96) give an account of the reconditioning system in an Army camp and report excellent results. Detailed reports of the methods and effectiveness of the convalescent programs developed by the various nations and armed services in World War II are not yet available. There can be no doubt, however, that a new era has been introduced into military hospitals, profoundly changing the life of the patient.

In World War I there was organized in the Office of the Surgeon General a Division of Physical Reconstruction which very successfully instituted programs somewhat on the order of present-day reconditioning programs (145); but these were not long continued after the armistice and they apparently influenced civilian hospital organization and practice only slightly. (An exception is the rise of occupational and physical therapy to professional status.) There are reasons to believe that this will not be the fate of the present development. Because of the longer duration of World War II, the programs became better established and a larger number of physicians became acquainted with them. Beneficial results have already been objectively demonstrated, and presumably many more relevant data will be published. The present-day program has a much better physiological and psychological basis than the former one. Even before World War II there were civilian trends in this direction, as has already been indicated, and there is evidence that they are continuing. For example, the Baruch Committee on Physical Medicine endorsed an enlarged conception of physical medicine, to include not only its use in diagnosis and treatment of disease but also "its utilization in the broad field . . . between definitive care and ability to return to productive work" (154). The Emergency Medical Services in Britain recommended the use of similar procedures in the civilian hospitals under its control (149). Krusen (71) advocates the use of health resorts for such programs and states that some civilian hospitals have plans in this direction already under way. Solomon (123, 124, 125) has instituted an interesting civilian rehabilitation program for patients with protracted convalescence, especially emphasizing psychological aspects.

If reconditioning program should be generally introduced into civilian hospitals, a great opportunity for social-psychological investigation would be presented. The procedures now used are based upon common sense and practical experience. One cannot but be impressed with the difficulty of the psychological problems involved and the wisdom with which they are handled in many programs. As these procedures are more extensively adopted, however, there will be need for systematic investigations of the effectiveness of different programs and routines, and for conceptual clarification and definition of their psychological aspects. The following list is illustrative of the kinds of problems which can feasibly be studied at the present time:

1. *The relative importance of the psychological and physical factors in rehabilitation programs.* Some of the discussions assume that the effectiveness of reconditioning is entirely physical; others stress the importance of the psychological factors. Actually, the extent of the change produced in the patient's psychological situation by the reconditioning program can hardly be over-exaggerated. Although medical requirements in these programs have priority upon the patient's time, the fact that his free time is kept completely occupied with nonmedical activities and that he is returned to military discipline at the earliest possible moment must certainly operate to lower the potency of the sickness situation. Although every program of physical exercise necessarily changes the psychological situation for the patient and hence complicates the problem to some extent, programs involving only optimal physical activity could be compared with those providing educational, recreational, and mental hygiene features, as well.

2. *The effects of different kinds of activity programs upon patients' attitudes and participation, and upon their medical progress.*

3. *Methods of motivation.* Any program involving extensive exercise raises the problem of motivation. Even in the military hospitals where authority is strong, it is reported that the chief task of the rehabilitation orderlies in the wards is to see that exercises are repeated hourly, "coaxing, urging as the case may be." In civilian hospitals, problems of motivation will be different and will have to be handled in different ways. Rose (111) believes that peace-time medical practice in which the individual is the keystone will strongly militate against the use of procedures that have proven successful with groups of patients in military hospitals.

4. *Problems of institutional morale.* There is general agreement that proper institutional atmosphere, or morale, is extremely important. Without this, it is reported that convalescent centers can be worse than useless. Many social-psychological problems which are quite different under civilian conditions are involved here.

5. *Solving personal problems.* In peace as in war the urgency and acuteness of personal problems are increased during illness. Most army programs have arrangements for personal and group counseling, but these are lacking in most civilian hospitals. In addition to army experience, industry and schools have much to contribute on this subject. The hospital would seem to be the institution which needs this type of service most urgently; and it appears to us to be among the most important and fruitful fields for psychological work in medical institutions.

Occupational Therapy

The development most directly related to reconditioning is the increase in the use of occupational therapy in hospitals. Becoming widely established in both mental and general hospitals (145) in World War I, it has since acquired the status of a profession. The American Medical Association has set standards of training for accepted schools of occupational therapy, and both the Association and the War Department have prepared official manuals for the guidance of occupational therapists (144, 146). A great number of publications on this subject has appeared since 1920, many of them in the official publication of the American Occupational Therapy Association, *Occupational Therapy and Rehabilitation*. These cannot be reviewed here, but a large number of them describe programs in operation in different hospitals and are eminently practical. From our point of view, the chief interest in these writings lies in the evidence adduced as to the effectiveness of occupational therapy, and the assumptions as to the sources of its benefits. Except for the general impressions of the authors, we have found no evidence concerning effectiveness; but the sources of the presumed benefits are frequently discussed. Almost universally, the following types of occupational therapy are identified:

1. *Diversional:* simple, prescribed activities chosen to induce rest, sustain morale, and prevent neuroses
2. *Functional:* activities which assist in the restoration of articular and muscular function, improve the general physical condition, and build up physical endurance
3. *Prevocational:* activities chosen to prepare the patient for return to his former or a new vocation

According to the Occupational Therapy Manual prepared by the Council on Physical Therapy of the American Medical Association (144), the mental effects of occupational therapy on the patient are as follows: It acts as a normalizing influence since it is natural for man to be occupied, eases emotional stress and restlessness, is an outlet for repressed energy, arouses and develops attention, replaces unhealthy mental trends with healthy ones, substitutes encouragement for discouragement, conserves work habits and prevents habits of invalidism, and gives opportunity for self-expression and development of initiative. The social values are said to be three: It raises morale of patient, ward and hospital, develops group responsibility and cooperation, and gives opportunity for social contacts in normal activities.

In the publications relating to occupational therapy in World War II, two trends are discernible. One is the introduction of highly motivated vocational activities into hospital wards. The program of the ARMA Corporation introducing light assembly work on Navy equipment into the wards has been highly publicized (99). Patients are paid at the regular rates. The program is said to be a great morale booster and an acceptable proposition for the company from a business standpoint, although data to support these statements are not given. A somewhat similar program of the Northrop Aircraft Company has also been described (102). The R.A.F. and A.A.F. are reported to have had a very satisfactory response to the introduction of activities connected with flying, e.g., light repair work, plane identification, communications code practicing, etc. Littlefield (80) describes a rehabilitation workshop in the Austin Motors factory in England. Somewhat similar is the tendency to substitute such "modern" activities as photography, plastics, model making, fly tying, etc. in place of the traditional weaving, leather work, and basketry. The second trend, particularly among those who have developed the British rehabilitation centers, is the deprecation of the value of occupational therapy.

To the authors, the chief weakness of the occupational therapy movement is its failure to develop an adequate rationale for its program. It has offered neither objective proof of its effectiveness, nor a theoretical basis for its procedures. Here is an example of the impracticability of being too immediately and completely practical. Such slogans as "If the hands and feet are busy, the mind will be untroubled and content," and "Work is the natural state of man" can hardly be expected to impress many today. On the other hand, recent developments in the understanding of play and projective techniques, of counseling, and of personality and emotion would appear to provide excellent beginnings for an effective psychology of occupational therapy. There is every reason to believe that it is possible to begin to define the conditions benefited by superficial motor activities, passive diversion, primitive free play, emotional cathartic activities, prevocational activities, therapeutic counseling, group activities, etc. Very little has been attempted along this line; but some of the more stimulating publications on the subject are included in the bibliography (15, 18, 21, 26, 28, 32, 60, 62, 77, 95, 98, 104, 121, 148, 155). Kubie's (72) article, in particular, gives some indication of the different levels upon which rehabilitation work must operate; and a case of a disabled child described in some detail by Axline and Rogers (4) provides an excellent forecast of the possibilities that are emerging in counseling. Rubenstein (112) shows the great possibilities of group activities.

CHAPTER VII

EMPLOYMENT OF THE DISABLED

In the preceding chapters dealing with particular disabilities, problems of employment peculiar to each of them have been discussed. There is also a considerable general literature upon this subject.

Employer Practices in Hiring the Physically Disabled

Data upon actual practices in the employment of handicapped workers are highly unsatisfactory because of the selective nature of the samples of employers or employees studied and the unknown validity of the reports.

Bluett (10)[20] in 1942 reported that he received returns from 32.6% of the employers to whom a questionnaire was sent. Of the respondents, 72.8% reported that they would employ handicapped persons if they could be assured that their insurance rate would not increase; they were not asked what their policies actually were.

In 1940 the National Association of Manufacturers (102) conducted a survey in which questionnaires were sent to 4,500 companies, of which 1,500 replied. One question relevant to the present discussion read: "If pre-employment physical examinations are conducted, what per cent of examinees are rejected as a result of them?" There were 1,154 replies to this question, i.e., a 25% return. The average rate of rejection reported was 4.4%, the distribution of rejection rates being as follows:

Rejection rate	*Percentage reporting*
0–5%	78
6–10%	15
11–50%	7

A second question of interest read: "Are physical findings of examinees rated according to the demands of the job?" There were 1,388 replies to the question, or a 30% return. Of these, 80% replied "yes". The authors of the report conclude from these findings that "Most concerns use physical examinations as a means of determining proper placement, but do not unwarrantedly discriminate against applicants on the basis of the results of these examinations."

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[20] References for Chapter VII will be found on pp. 333–339.

Several problems come to mind in connection with this interpretation. First, the relatively small return from the population studied raises a question as to the representativeness of the sample. No evidence is provided on this point. Offhand, the hypothesis that employers with the most acceptable programs would be most likely to reply appears tenable. If this is true, the results give an unduly favorable picture of employment practices. Secondly, the question on rejection rate does not specify any particular dates for which the actual rate is to be reported; hence that given may often be the general impression of the respondent, an extremely unreliable source of information. Finally, the question of whether a rejection rate of 4.4% is high or low is, of course, one of evaluation. Actually, a considerable number of persons were involved, for in 1940 the total industrial labor force approximated 17 million.[21]

A committee of the White House Conference in 1933 reported the results of questionnaires sent to 600 of the largest employers in the United States (121). The number who responded is not given. Of those who did reply 50% stated that they did not employ the physically handicapped under any conditions; 25% stated that they employed the physically handicapped injured in their own service, but did not hire new handicapped employees; 25% stated that they did not discriminate between the normal and the physically disabled, but placed the worker on a job which he could perform.

In 1935 the California Bureau of Vocational Rehabilitation reported the results of a survey of the policies of 3,250 employers in the state (95). An effort was made by means of interviews to determine the extent to which disabled persons were employed. No attempt was made to obtain this information from 14.8% of the employers. Of the remainder, 15% refused to reveal their policy or no definite conclusion could be reached; 23% were reported as "unfavorable" in their policy of employing the disabled; and 62% were reported as "favorable". Exactly what was included in the "favorable" and "unfavorable" categories is not stated. In the industrial establishments studied 2.3% of the employees were found to have a physical disability of some sort. However, the authors state that "It would be too much to expect that [this] is a true figure. It should be considered a minimum, but it is believed the real number is much larger. A decided tendency to conceal defects was observed. Many employees feared that to admit physical impairments might endanger their positions." A house-to-house canvass of the general population in San Francisco and Los Angeles revealed that exactly the same percentage of disabled was reported for the age range 15–55 years. To what extent the concealment was greater or less in this latter case is not clear.

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[21] If, by and large, the same disabilities are not rejected by all industries, and if the same persons are rejected by a number of employers, the total number of individuals unable to secure industrial employment would be less than 748,000 (4.4% of the total industrial labor force). However, it is undoubtedly true that the extreme cases do not apply for employment and some less severe cases do not apply where they know they are likely to be rejected; these influences would mean that the 4.4% rate is too low.

Civil service employment also has its physical requirements though how they are used in practice is difficult to determine. This is illustrated, for example, by the health standards required of applicants for credentials in the California public schools. Any one of a long list of physical conditions varying from unhealthy gums to marked deformities of body or extremities may be considered sufficient reason for denying a candidate a credential. It is further stated, however, that "in an occasional instance outstanding personality or teaching ability may be considered to compensate for one or more physical defects" (101). We have been unable to ascertain what the actual policy is.

A final source of evidence respecting employer practices in hiring the disabled is found in the attitudes of unions and officials in the Department of Labor. These attitudes are indicated, for example, in the Proceedings of the Seventh National Conference on Labor Legislation (106) held in 1940. At this conference labor union and state labor relations officials expressed themselves in resolutions on a variety of issues. One resolution which was passed read: "Until specific recommendations are made available, this committee is opposed to physical examinations unless the employer first has proved to the State that he has installed proper safeguards to protect the employees' health and safety, and unless the State has adopted laws to prevent discrimination against workers resulting from physical examinations." The discussions revealed two possible advantages to pre-employment physical examinations, namely, proper job placement and safeguarding the health of employees. However, the consensus seemed to be that the advantages were outweighed by the two following disadvantages, unless specific steps were taken to avoid them: use of the physical examination to deny employment and to deny rights under Workmen's Compensation Laws. The view was expressed that examinations should be made by government physicians and that the details of the results should not be reported to the employers, but only the employment limitations necessitated.

From this and indirect evidence we gain the impression that the majority of employers discriminate against persons with physical handicaps, and that the purpose of the pre-employment physical examination is usually to eliminate such persons from employment, although employers, medical experts, and government personnel officers do not mention this purpose except to condemn it (30, 44, 86). Our impression is supported by the efforts of placement agencies to develop procedures for "selling" handicapped persons to employers; much space in the manuals and articles by and for rehabilitation personnel is devoted to this problem (105, 111, 119). The magnitude of the War Manpower Commission's campaign during World War II to increase the use of disabled persons in war industries points in the same direction (76). The number of disabled persons placed by the U. S. Employment Services in 1943 was 91,396, 72% more than the number placed in 1941, and 230% more than that placed in 1940 (92). This suggests that many employable disabled persons were unemployed in 1940 when labor demands were already great.

The negative policy of the bulk of employers is also suggested by the attention received by the few who publicize their employment of the handicapped. The National Society for Crippled Children has prepared a bibliography of publications describing the programs of 30 outstanding employers of the crippled (88). Most of these are general articles describing very favorable experiences with the disabled. Almost all testify that disabled workers have superior production, attendance, turnover, and morale records. However, at least one company pays some classes of disabled workers at a lower rate than normal employees because the former cannot be transferred to other work easily (81). On the other hand, 80% of the staff of one small company are disabled, suggesting that large numbers of handicapped workers are not necessarily inflexible and uneconomical in some businesses (36). Without doubt the publicity value of these publications is great, and was especially so during the war when the public highly approved efforts to increase production. Furthermore, it should be borne in mind that when these publications were issued many of the companies had war contracts on a cost-plus basis, so that the pressure for efficiency was not as great as under normal competitive conditions. For these reasons, it may be doubted that the enthusiasm for the employment of disabled persons is so widespread in peacetime or will continue at the level indicated in these publications.

It is only fair to state that a number of companies have had a long history of using disabled workers (24, 56, 88). On the other hand, employers who reject disabled persons do not publicize their programs. One writer(13) lists the following bases for rejection of applicants by an anonymous company: 1) anemia, underweight and overweight, 2) active or recently active tuberculosis, 3) mental deficiency, 4) heart disease, 5) hernia, or strong tendency to hernia, 6) undescended testicle, 7) defective vision with specifications given, 8) defective hearing with specifications, 9) history of epilepsy, 10) gonorrhea, syphilis, 11) marked crippling of the body, arms, legs, hands, or feet, 12) history of rheumatism, 13) skin rashes, varicose veins, 14) high blood pressure.

These studies and indirect evidence emphasize the need for exact data on the extent of employment of physically disabled persons. It seems little more than useless to seek such information through surveys of the usual questionnaire or intervew type in which the kind of selection in the respondent group and the accuracy of report are not known.

Studies of Work Records of the Physically Handicapped

Central to the problem of availability of employment opportunities for the disabled is the question of their effectiveness on the job. Several studies have been made in this area and will be reviewed in some detail.

Dietz (21) reports the results of a comparative study of the work records of 115 matched pairs of disabled and nondisabled workers in a Western Electric Company plant during the year August, 1929, to August, 1930. The disabilities and their percentage frequencies were as follows:

Visual defects	49.7
Hernia	16.1
Varicocele	8.8
Hydrocele	1.8
Deformity or loss of member	19.4
Loss of organ	3.3
Varicose veins	0.9
Total group	100.0

Each disabled worker was matched with a nondisabled worker for date of employment, type of work, and department of plant. As nearly as possible each disabled worker was placed in a job in which he was able to produce as much as a nondisabled worker, and at the same time not be a menace to himself or others. Results were obtained as follows:

Job stability: Resignations were 7.9% greater among the nondisabled, and releases because of unsuitability to work were 7.4% greater among them. Terminations because of lack of suitable work were 2.6% greater among the disabled.

Absences: Time lost because of sickness was 7.0% greater among the nondisabled; while that lost for personal reasons (business, marriage, funeral) was 9.5% greater among disabled workers.

Accidents: These were 5.6% greater among the nondisabled.

Increase in earnings: For weekly rated employees the average increase in earnings was 4.0% for the nondisabled, and 4.6% for the disabled. For hourly rated employees, the comparable average increases were 9.9% and 8.0%, respectively.

Production: Although no data are given, many supervisors reported that the disabled were the equal of other employees in their departments.

Cost of special placement: Again no data are given, but it is stated that the only additional outlay was the cost of a job investigator, a special physical requirements chart for different jobs, and special progress reports.

In the opinion of the author, these data give no basis for believing that people with physical defects of the sorts included should not be employed by large industrial concerns. He adds the caution that the number which could be assimilated in an industry is not known but is certainly limited, since too many employees of this class would tend toward inflexibility in the organization's personnel.

Anderson (4) studied the vocational case histories of 4,404 physically disabled men who had been referred to the Employment Center for the Handicapped in New York City between 1917 and 1930. Most of these men had no special rehabilitation training. The chief purpose of the study was to determine the kinds of jobs men with different disabilities had filled and their success in these jobs. Only orthopedic handicaps were included in the study, with the following results:

Stability of employment: In this disabled group 52% of the jobs were held for 6 months or less, compared with 75% of jobs similarly held by a roughly comparable nondisabled group. The mean length of jobs held by the most seriously disabled was 18 months compared with 15 months for the least seriously disabled.

Earnings: Completely comparable normal groups were not available; the indication was that the handicapped workers were paid at a slightly lower rate than the nondisabled.

Type of job held before and after disablement: Unskilled jobs increased 24% after disablement; clerical jobs increased 6%; semiskilled jobs decreased 11%; and skilled jobs decreased 19%.

The results are interpreted to mean that during the years 1917–30, orthopedically disabled men who secured jobs were at least as stable in their employment, and therefore presumably as satisfactory in their work, as nondisabled men. Furthermore, the most severely disabled were more stable in their employment than the least severely disabled. The author believes this may be attributed to the fact that severely disabled men realize the difficulties they would face in finding a new position and therefore exert greater effort to retain their jobs. Nevertheless, reductions in job status and probably in rate of earnings were associated with disability. In interpreting these results, it should be borne in mind that very few of these men had received systematic vocational retraining.

McFarland (49) reports a few data from a study of 685 handicapped and 685 nonhandicapped workers in an industrial plant:

Absences: 7% higher among nonhandicapped
Discharges for causes: 5.6% higher among nonhandicapped
Increase in earnings: 4.6% higher among nonhandicapped.

Reed (58) reports experiences with about 260 disabled workers who would not have been hired under prewar physical standards. Of the nondisabled, 15% terminated their employment within 6 months. For the handicapped groups, the following percentages terminated employment in the same time: hernia, 13%; cardiac, 16%; varicose veins, 15%; hearing loss, 6%; vision loss, 9%; diabetes, 50% (8 cases). According to the author, these results indicate that the disabled are able to perform the work assigned to them and have a favorable record of staying on the job.

Harvey and Luongo (32) compared the work records of 2,858 severely impaired workers in 43 establishments of the War and Navy Departments with the records of physically normal workers of the same sex, age, and length of experience, on the same jobs, under the same supervisors. Most of the disabled workers had been carefully placed in jobs considered suited to their abilities. The percentage distribution of the cases by type of defect was as follows:

Orthopedic	57.2
Defective vision	19.8
Defective hearing	8.4
Cardiac disability	8.2
Respiratory disorders	5.8
Miscellaneous	0.6
Total group	100.0

The following results were obtained:

Accident proneness: With respect to frequency, the total number of lost-time accidents per 1,000,000 man-hours exposure was 16.15 for the disabled and 12.26 for normal workers. In severity of accidents there was little difference between the two groups, the days lost per 1,000 hours worked being .21 and .20, respectively. Similar computations according to disability yielded the following rates, in order of severity:

	No. of accidents per 1,000,000 man-hours exposure	*No. of days lost per 1,000 hours worked*
Fingers	21.10	0.51
Hearing	36.36	0.47
Lower extremities	11.08	0.23
Shoulder or hip	30.01	0.22
Cardiac	13.07	0.21
Upper extremities	16.34	0.20
Leg or legs	13.00	0.17
Spine or back	10.20	0.15
Vision	15.86	0.15
Tuberculosis	11.60	0.08

Only one worker in this study received an injury of the type that would place him in the second injury class.

Production efficiency: Supervisors and foremen rated individual disabled and able-bodied workers, but did not know that the purpose was to evaluate the performance of the former. The percentage distributions of the various ratings follow:

Quality of work performed compared with others	*Disabled*	*Normal*
Much better	6.6	8.3
Somewhat better	23.7	23.8
About the same	63.2	63.4
Somewhat worse	5.9	4.0
Much worse	0.6	0.5
Total group	100.0	100.0

Quantity of work performed compared with others	*Disabled*	*Normal*
Much more work	5.9	6.9
Somewhat more work	21.5	24.6
About the same	56.3	58.3
Somewhat less	13.9	8.4
Much less	2.4	1.8
Total group	100.0	100.0

Efficiency rating	*Disabled*	*Normal*
Excellent	8.6	10.2
Very good	34.3	35.2
Good	43.6	43.5
Fair	10.8	9.3
Unsatisfactory	2.7	1.8
Total group	100.0	100.0

Opinions of foremen and supervisors	*Foremen and supervisors*
A man works better because of disability	3.8
Disability makes no difference	75.8
A man works less well because of disability	20.4
Total group	100.00

Sickness absenteeism: The average number of days lost annually was 8.0 per worker for all classes of the disabled combined, compared with 7.2 per normal worker. There was considerable variation in the average number of days lost by the different groups of disabled, as shown in the following list:

Disability group	*Average no. of days lost annually per worker*
Tubercular	14.4
Epileptic	14.0
Hearing difficulties	9.4
Leg or legs	8.8
Diabetes	8.5
Shoulder or hip	8.4
Cardiac	8.3
Respiratory	7.6
Lower extremity	7.6
Arm or arms	7.4
Spine or back	7.3
Upper extremity	7.2
Visual	6.9
Finger	6.4
Hand or hands	6.2
Dwarf	5.1

Turnover: Turnover rates were computed by dividing all terminations, except those for entering the armed services, by the average number of employees per year, yielding rates of 5.4 for the disabled and 52.9 for normal workers.

Special considerations: The proportion of all disabled workers requiring changes in job conditions was 19.7%, and that requiring special consideration regarding time of arriving, leaving, rest, etc. was 9.7%, whereas virtually no normal workers were given special consideration in these respects.

Earnings and Promotions: No differences were found.

Brighouse (11) analyzed the work records of 1,815 physically disabled employees of an aviation corporation and those of 538 comparable nondisabled employees. The disabilities included and their numerical frequencies were as follows:

Auditory handicaps	103
Cardiac and circulatory handicaps	200
Abdominal hernias	104
Orthopedic disabilities	452
Respiratory disorders	141
Visual disabilities	345
Multiple	188
Miscellaneous (includes diabetes, endocrinopathies, epilepsy, gastro-intestinal disease, reproductive system disorders, skin disorders, varicosities)	282
	1,815

These employees were carefully placed in jobs considered optimally suitable to the physical status of the worker. Data on age, marital status, and character have been reported previously (cf. p. 69). Results of the analysis may be summarized as follows:

Advancement: Three indices of vocational advancement were available: 1) holding a supervisory job, 2) being on the monthly payroll instead of an hourly wage basis, 3) the time required to advance from lowest to intermediate and from intermediate to highest labor grade (from grade "C" to "B" and from "B" to "A"). With respect to these indices, the two groups show the following comparable proportions:

	Percentage of cases			
	In supervisory capacity	*On monthly pay basis*	*Requiring longer time for promotion than median of control group*	
			C to B	*B to A*
Control	4.1	4.3	50.0	50.0
Disabled	1.5	2.8	34.4	45.9

The conclusion is drawn that the physically disabled employees are less likely to be advanced to managerial levels, although their advancement through the lower labor grades is somewhat more rapid than the physically normal employees.

Job stability: The following data were obtained on frequency of termination of employment, and length of service:

	Percentage of cases	
	Terminating employment on January 31, 1945	*With longer service at termination than median of control group*
Control	31.2	50.0
Disabled	26.7	61.0

Somewhat slower labor turnover is suggested for the handicapped employees.

Absences: Three sources of evidence yielded the following data:

	Percentage of cases		
	Having more absences for sickness than median of control group	*Having more unexcused absences than median of control group*	*Absent on New Year's Day, 1945*
Control	50.0	50.0	29.5
Disabled	60.5	40.3	21.1

It would appear that the disabled employees were more conscientious in getting to work when not prevented by illness.

Accidents: With respect to frequency, 2.8% of the disabled and 2.0% of the nondisabled lost time because of industrial accidents. The comparable proportions of the various disability groups were as follows:

Multiple	3.9
Hernia	3.9
Respiratory	3.5
Orthopedic	3.1
Auditory	2.9
Cardiac	2.5
Visual	1.4

The following data are suggestive of the relative severity of accidents among disabled and normal workers:

	Disabled	*Normal*
Median number of days lost per accident	5.0	3.0
Mean number of days lost per accident	12.5	3.8
Median compensation per accident	$9.00	$7.00
Mean compensation per accident	29.12	10.35

Insurance: An insurance plan providing coverage for illness, nonoccupational accidents, and death was available to all employees. The data on participation and claims are as follows:

	% filing claims	*Mean amount paid per employee*	*Mean amount paid per claim*
Control	14.6	$18.60	$103.00
Disabled	21.7	35.99	166.00

The disabled seek and receive more benefits from the insurance in force.

Ratings by supervisors: Once a month hourly paid employees were rated by their supervisors on quality and quantity of work, knowledge of the job, and actions. Upon termintaion of employment the acceptability of the employee for rehiring was reported. Supervisors could record a commendation for work well done. The following proportions of the two groups received the ratings indicated:

	% rated more favorably than mean of control group	*% suitable for rehiring*	*% receiving special commendation*
Control	50	91	10.3
Disabled	33	89	8.9

Thus the disabled were not rated as favorably by supervisors as the nondisabled.

Violations of company rules: 20.2% of the disabled and 21.4% of the nonhandicapped were reported as violating rules.

Employee grievances: Dissatisfactions which were not worked out with the supervisor could be taken up with the labor relations office; 6.2% of the disabled and 6.7% of the control group filed at least one such grievance.

Reactions to the employment of disabled persons: On the basis of informal interviews, the investigators gained the impression that employment was beneficial and satisfying for the handicapped, but that the reactions of their physically normal fellow-workers were mixed. In general, employees with the more severe disabilities seemed to have a wholesome effect upon their co-workers. The results were not always as satisfactory when the physical defect was not obvious. Some normal workers expressed considerable resentment because they felt they had to carry extra work for somebody who had no sign of physical defect. Such feelings were particularly common toward those with hernias, cardiac disease, and respiratory disorders; sufferers from these conditions were accused at times of malingering in order to avoid heavy or disageeable work.

Summary of Data on Work Records

1. *Labor turnover:* Rates of labor turnover are lower for disabled employees.
2. *Accident proneness:* The data are not in complete accord. The most recent and thorough studies agree that the frequency of accidents is greater for disabled employees. However, Harvey and Luongo found the total amount of time lost because of acidents to be no greater for disabled employees.
3. *Absences:* The picture is not complete. Absences because of illness are more frequent among disabled employees, according to the recent studies; but Brighouse found unexcused absences to be less frequent.
4. *Supervisor's ratings:* Disabled employees receive lower ratings, on the average, than physically normal employees.
5. *Advancement:* At the lower levels the disabled employee advances at least as rapidly as the nondisabled, but promotion to supervisory and managerial positions is less frequent.
6. *Insurance:* Disabled employees make more claims and receive more payments for both industrial and nonindustrial disabilities.
7. *Cost of employment:* Items of additional expense in hiring disabled workers are special placement procedures, and alterations in equipment and facilities.

There are several matters to be kept in mind in evaluating these results. The two most adequate studies (11, 32) were made under wartime conditions when the labor shortage was great and problems of cost relatively unimportant. It may be that under other conditions different results would be obtained. Also, most of these studies were made in large industrial establishments; results for small concerns might not be the same. Different placement procedures from those in operation in these particular plants might well change the picture. The attitude of management toward physically impaired workers influences both the efficiency of the workers and the data on ratings, turnover, and advancement. For example, the greater frequency of minor injuries may mean that supervisors report such injuries more frequently for the disabled than for the nondisabled because of unusual sympathy or antagonism toward them. How the assets and liabilities of disabled employees balance in the total employment picture is not indicated by any available data.

Several other methodological considerations of importance in planning future investigations are apparent. The data should be analyzed in relation to degree of disablement. When all degrees of severity from slightly impaired hearing to wheel chair cases are considered together, the value of the findings is greatly reduced. It is probable that classification in terms of functional limitations rather than according to disease categories is more meaningful. Ratings by supervisors, unless made on an objective scale in relation to concrete behavior, are difficult to interpret. Whether the lower ratings reported in the investigations indicate actual deficiencies of employees or biases of supervisors is impossible to determine. Finally, translation of findings in terms of dollars and cents is highly desirable. It is clear that some statistically significant differences may be industrially unimportant.

Employers' Reports of Experiences with Physically Disabled Workers

In this section we shall turn from studies of actual work records, and consider the opinions of employers as to the efficiency of physically disabled workers.

Lavos (42) investigated employers' experiences with men who had suffered permanent orthopedic impairment while employed in industry. The cases were selected from the files of the New York City office of the Vocational Rehabilitation Division of the State Department of Education. Only disabilities of the hand, arm, foot, or leg with at least 30% loss of use were included. All the cases had entered employment as handicapped workers between July, 1932, and July, 1936. The follow-up was made in March, 1938, and each case had been employed as disabled at least 18 months. Half the cases were working for their pre-disability employers, half for new employers.

Of 271 questionnaires sent to the current employers, 150 (55%) were returned filled out, and 36 (13%) were returned blank with an accompanying letter giving some information. Analysis of the 150 completed questionnaires yielded the following results:

	% of employers answering		
	"No"	*"Slightly"*	*"Considerably"*
1. Does employer require less efficiency from the disabled employee?	86	10	5
2. Does the disability interfere with performance of job?	83	14	3

No relation was found between the responses to these two questions and degree or location of disability of the employee. However, the older disabled

	% of employers answering		
	"No"	*"Slightly"*	*"Considerably"*
(age 45 or over) were judged less favorably in these respects than the younger disabled.			
	"More"	*"Same"*	*"Less"*
3. Productivity in relation to other workers	12	82	6
No relation to location of disability was found; the more seriously disabled were judged more productive than the less seriously disabled; older workers were judged less productive than younger.			
4. Wastage in relation to other workers	0	92	8
5. Chances of promotion in relation to other workers	7	85	8
Older workers were judged to have less chance of promotion than younger.			
6. Cooperation in relation to other employees	12	87	1
7. Dependability in relation to other employees	12	85	3
8. Effort in relation to other employees	16	81	4
9. Complaints in relation to other employees	3	66	31
10. Irregularity in arriving at work	0	79	21
11. Absences	1	78	21
	"None"	*"Slight"*	*"Considerable"*
12. Modification of job to suit disabled employee	90	6	4
13. Restriction on number of jobs disabled employee can perform	94	3	3

	% of employers answering		
	"None"	*"Slight"*	*"Considerable"*
Older employees were judged to be restricted more frequently than younger.			
	"Never"	*"Occasionally"*	*"Often"*
14. Expectation of special privileges on part of disabled employee	93	3	3
15. Evidence of discrimination against by fellow employees	100	—	—
16. No evidence was presented to indicate that the disability was a factor in the causation of any of the accidents reported.			

The author concludes that employers when reporting upon particular disabled men give a favorable report of their working effectiveness as compared with that of normal workers. Employers' judgments with respect to complaints, absences, and promptness were especially favorable. However, disabled employees over 45 years of age were judged relatively adversely by their employers.

In evaluating this study, it should be kept in mind that each employer rated a particular employee, not disabled employees in general. This procedure should avoid to an unknown degree the influence of stereotyped ratings. The returns were good as compared with most questionnaire studies, and Lavos offers evidence to indicate that those who did not reply were in some respects typical of those who did respond. Questionnaires were returned by a greater proportion of the employers of the older disabled than of the younger disabled, thus weighting the totals somewhat in the unfavorable direction. There appears to be an inconsistency in the replies to questions 2 and 3. On question 2, 17% report some interference with job performance. On question 3, on the other hand, only 6% report the disabled workers less productive than others, and 12% report them more productive. It may be that a worker who does impressively well in relation to his apparent limitations is unconsciously rated high in relation to others too, and that this "halo" effect enters into question 3 more than into question 2.

Trump and Montgomery (74) report the findings of a Bureau of

Labor Statistics survey of employers judgments of disabled workers. Questionnaires were sent to 500 employers and answers were received from 300 with a total of 1.3 million employees, of whom 63,382 had marked physical impairments. Of the 300 employers, 61% reported that they had both pre-employment physical examinations and a job analysis program; 7% had neither. The following percentages of these 300 employers rated their disabled workers as indicated in comparison with the nondisabled:

	Better	*As good*	*Poorer*
Efficiency on job	8	87	5
Absenteeism	49	44	7
Injury frequency	51	38	11
Labor turnover	58	31	11

The employers mentioned the belief that the number of jobs open to physically impaired workers is distinctly limited, especially in hazardous and heavy industries, and in those using production line methods. Many expressed the opinion that such workers are useful only on tedious, repetitive jobs. Some employers cited the difficulty of transferring the physically disabled from one job to another, with consequent loss of flexibility in plant operation.

The Office of Vocational Rehabilitation of the Federal Security Agency has published a series of letters from employers relative to the working efficiency of disabled workers, together with a summary of the frequency with which particular judgments were expressed (100). The conditions under which these letters were collected, and the number not responding to the request are not reported, but the following percentages of the 75 to 105 employers who did respond rated their disabled employees as indicated in comparison with the nondisabled:

	Better	*As good*	*Poorer*
Production efficiency	24	65	10
Absenteeism	55	40	5
Accident rate	56	41	2
Labor turnover	83	16	1

Novis (54) reports that 63 employers of 1,008 permanently handicapped workers, representing 2% of their total labor force, found the reliability and productivity of the disabled workers well above average, absence from work without sufficient cause very rare, and proneness to accident negligible.

Marquis, Novis, and Wesley (48) report that the employers of 23 disabled workers rated them as follows:

	Good	*Fair*	*No rating*
Absenteeism	21	2	—
Production	17	3	3
Reliability	20	2	1

The same authors report that 37 employers gave the following information concerning absenteeism, reliability, production, and proneness to accident: 69% of the ratings on these factors classified the handicapped employees as somewhat better than the able-bodied; 21% classified the handicapped as equal to the able-bodied; 10% classified the handicapped as definitely superior.

In a California survey (95) the employers of 3,925 disabled persons reported that 93.2% were successful on the job, and that 5.6% were unsuccessful; there was no report on 1.2% of the disabled employees. Of the same group 5.3% received a wage above standard, 85.1% a standard wage, and 7.4% a wage below standard.

It is noteworthy that the general impressions of employers as reported are uniformly favorable to the handicapped employee. This is in marked contrast with the results of the investigations reviewed in the previous section which were based largely on actual work records and not on opinion. Two possible explanations of this contrast readily come to mind. The replies to the questionnaires may be loaded, because of disproportionate returns from employers with favorable experiences. Secondly, when answering a questionnaire to which the employer's name is attached the pressure to express publicly approved attitudes may be great enough to bias the judgment expressed. This is in line with the suggestion, made in Chapter III, that the favorable attitudes so often expressed toward handicapped persons frequently mask inadmissible, unfavorable opinions.

These studies of industrial experience with disabled workers are in almost complete agreement regarding the effectiveness of such workers in industry. Questions then arise as to the source of the prejudice against employing handicapped workers. The possibility that the studies do not give a true picture should not be overlooked. Furthermore, it is certain that all the factors relevant to employment of the disabled have not been studied, and it is probable that some of the crucial factors have been missed. In this connection the attitudes of employers are revealing since they indicate the real basis upon which the issue is likely to be decided.

Attitudes of Employers toward Hiring Disabled Employees

No systematic studies of employer attitudes have been made, but such attitudes are expressed in a wide variety of publications (2, 5, 20, 34, 43, 46, 57, 70 in addition to other publications cited in this chapter). In these sources we have found the following favorable and unfavorable opinions expressed:

Unfavorable to hiring	*Favorable to hiring*
1. The lower production rate of the disabled leads to increased cost of production and lowered wages, when wages are based upon total output.	1. Properly placed, the disabled person's production is at least equal to that of the nondisabled.
	1a. Some disabilities are distinctly advantageous to productivity, e.g., the deaf are not distracted by noises; mutes cannot waste time talking.
2. The disabled increase accident rates, leading to: a. Increased insurance rates b. Increased liability for compensable injuries, particularly where a second injury greatly increases degree of loss.	2. The disabled are more cautious and are more carefully placed, leading to decreased accident rates. a. Since insurance rates are based on the actual experience of the insured, insurance costs will be decreased. b. Second injuries are extremely rare; compensation costs can be equalized through second injury fund.
3. There is greater danger to the disabled and others in emergencies: fires, earthquakes, explosions, etc.	3. Safety precautions and special exits can largely eliminate emergency dangers.
4. There is greater absenteeism among the disabled because of effects of illness, weather, etc.	4. There is less absenteeism because of greater conscientiousness.
5. The disabled increase costs of sick benefit plans, leading to dissatisfaction of other employees.	

6. The employer is the trustee of the funds of investors and cannot allow sentiment to enter the business	6. As a responsible institution in the community, industry has an obligation to employ a cross-section of the citizenry, including the handicapped.
7. Humanitarian responsibilities must be met outside of business, by charity, taxes, etc.	7. If the disabled are not allowed to work, they become a public burden and the cost of supporting them through charity is great. 7a. Modern machine industry causes great numbers of permanent disabilities and is therefore morally obligated to provide work for such persons, at least for those injured in the plant.
8. The disabled can perform only a limited number of jobs, leading to inflexibility in personnel.	8. The high degree of specialization in modern industry limits adaptability of personnel in any case. Specialization is what makes it possible for the disabled to compete with the nondisabled in many jobs.
9. The disabled cannot be accepted into the regular hierarchy of advancement because higher jobs usually require greater versatility.	
10. The disabled cannot meet the demands of the apprenticeship period, e.g., a lame boy can do jewelry repairing or press feeding but cannot enter these trades as a messenger, which is often required.	
11. The handicapped require special considerations—altered machines, special exits and ramps, help in arriving and leaving—leading to increased costs and interference with routines.	
12. Special placement programs with added job analyses and check-ups lead to increased costs.	

13. Fellow workers do not like disabled, and special considerations are resented.	13. The disabled on the job raise morale of the nondisabled; "if he can do it, I can do it."
14. Customers object to a place that looks like a charity organization.	14. Employment of the handicapped builds good will for the company.
15. Inevitably the employer's sympathy will be aroused and he will demand less, give special considerations, and will not be able to fire employee when he should.	
16. Disabled persons have disagreeable personality characteristics; they are depressed, nervous, temperamental, demanding of special privileges.	16. The disabled have good dispositions, patience, and fortitude.
	17. Employment restrictions, because of limited adaptability, lead the disabled to show greater conscientiousness and loyalty, make fewer demands and less fault finding.
18. Because of seniority rights in labor contracts, industry cannot afford to saddle itself with employees it cannot fire and who cannot adjust easily to changed production requirements.	
19. State safety laws make it difficult to employ the disabled.	
	20. The increasing age of the population in general is making it impossible to select only physically A-1 workers. Whether desirable or not, disabled workers will have to be used in the future.

Reports of Employed Disabled Persons

There have been only fragmentary reports of disabled persons' reactions to their employment experiences. In his survey of poliomyelitis cases (cf. p. 66) Lowman (45) found the following percentages of employed disabled subjects, making various self-estimations of their employment situations:

Self-estimation of job security	*Males*	*Females*
Decidedly secure	47.2	39.5
Secure	44.0	51.2
Insecure	5.3	0.0
Decidedly insecure	3.3	9.3
Total group	99.8	100.0

Self-estimation of effect of disability on work efficiency	*Males*	*Females*
In no way interferes	55.0	62.8
Have encountered little difficulty	15.4	2.3
Interferes slightly	26.3	34.9
Interferes greatly	2.3	0.0
No response	1.1	0.0
Total group	100.1	100.0

Self-estimation of opportunity for advancement	*Males*	*Females*
Dead-end job	38.4	37.2
Limited opportunity	31.9	51.2
Great opportunity	27.5	9.3
Do not know	2.2	2.3
Total group	100.0	100.0

Apparently these employed disabled persons consider that they have achieved some job security and that their disabilities do not greatly interfere with effective work; however, over two thirds of them can see little opportunity for advancement.

In 1944 Sweetland (73) studied 34 physically disabled persons who had received vocational training and guidance. He obtained his data in personal interviews, which took place during the first year of employment. He classified 28 of the 34 as well adjusted, i.e., as having made progress in wages and promotions, being happy on the job, liking their employers and fellow employees, and being liked by them. The remaining 6 were classified as fairly well adjusted in these respects. Sources of poor adjustment were reported to be: intolerance of disability by employer or supervisor, job not in accord with ability or interest, personality maladjustment. The study is interpreted by the author as indicating the possibility of satisfactory vocational adjustment by the physically disabled, but also as indicating the need for special care in placement.

Additional fragmentary data on this subject have been presented in Chapter IV (cf. p. 151). More detailed studies of the experiences of employed disabled persons should be of great value.

Insurance Rates and the Employment of the Disabled

The most frequently mentioned reason for refusing to employ physically impaired workers is the fear that the cost of workmen's compensation will be increased thereby. This fear is based upon two assumptions: 1) that the disabled are more prone to accidents than the nondisabled, and 2) that a second injury will increase the worker's degree of disability and hence the cost to the employer, out of proportion to the actual magnitude of the injury incurred (90, 122).

So far as the first assumption is concerned, the available data are contradictory but any greater proneness to accidents on the part of the disabled is clearly very slight. Much more extensive information is needed, particularly on the types of jobs and placement programs under which accident rates for handicapped persons are within normal ranges. Such studies have been initiated by the Association of Casualty and Surety Executives (87), which also has prepared a "Declaration of Attitude" stating its position on employing disabled workers (99). This statement stresses the following points: workmen's compensation insurance rates do not necessarily increase when disabled persons are employed; the physical condition of employees is not considered in determining rates; rates are determined for whole industrial classifications and by actual accident experience. There is therefore, it is stated, no immediate reason for an insured employer *not* to hire disabled workers. As insurers, the insurance companies do not advise against it. The long-time effects upon insurance rates have yet to be determined. A similar statement has been made by the National Association of Mutual Casualty Companies (89).

With respect to an employer's extent of liability for an injury to an already partially disabled person, the situation is less clear under workmen's compensation laws. Under the laws of some states, the courts have held that the employer takes the employee as he finds him. If the employee is suffering from some affliction which prolongs recovery after accident, or increases the degree of permanent disability after accident, or leads to death from an otherwise nonfatal accident, the employer is liable for the result. This added liability has been sufficient to prevent many employers from hiring any but completely able-bodied employees. Two means of removing this impediment to the employment of disabled workers have been tried. One is the use of waivers, under which the disabled worker relinquishes his rights under the workmen's compensation law. However, this is prohibited by the laws of many states and is generally recognized as contrary to the best interests of the employee. Another and more satisfactory solution to this problem is the creation of a special fund from which compensation for the combined effects of past and present industrial injuries is paid. There are various ways of building up such a fund and several model laws have been drawn up (108, 115, 116). Actually, obligations for second injuries have been incurred very infrequently. In 20 years' operation in Wisconsin only 56 individuals were awarded benefits from a second injury fund (12). In Massachusetts payments from the subsequent injury fund in 1938 amounted to 3 out of 34,000 compensation awards made (49).

Existing second injury funds, however, apply to only a fraction of the employees who present added employment hazards. The great mass of the chronically diseased are not covered and they present hazards which many employers are loath to assume. In many states diseases caused or aggravated by industrial operations are compensable, but the question of when a disease is aggravated is a difficult one and is subject to different interpretations in the courts (38). Rather than run the risk of unknown liabilities in this unexplored area, employers are under strong pressure to avoid them by rejecting applicants representing such liabilities. It is probable that until the responsibility of employers with respect to handicapped workers is exactly defined, or the risks are equalized among competitors, discrimination against disabled workers will be inevitable. (Several general discussions of the relation of workmen's compensation laws to employment of the handicapped are of interest; see references 3, 12, 14, 35.)

Job Analysis as an Aid to Employment of the Disabled

It has frequently been pointed out that power machine industry is one of the important sources of serious physical disabilities. The National Safety Council (82) estimates that in 1943, 70,000 persons in the United States were permanently disabled by industrial accidents. The increased frequency of serious accidents following the industrial revolution was one factor behind the enactment of workmen's compensation laws late in the nineteenth century and early in the twentieth. There is another consequence of power machine industry which is not so frequently mentioned: It may be the source of much physical disability, but through its specialized activities it is also the salvation of the handicapped. In the days of the hand craftsman, the artisan had to be adaptable and flexible in the extreme. The blacksmith, the cabinet maker, the shoemaker had to be able to lift, bend, grasp, and turn.

The situation is different now. The *Dictionary of Occupational Titles* (97) lists over 20,000 different jobs in modern industry, many of which involve very specialized movements. The Civil Service Commission's *Manual for Placement of the Physically Handicapped* (103) lists 49 positions out of 3,000 which can be adequately performed by a legless man, and 350 suitable for a one-armed man. It is evident that specialization in industry has made it possible for the person with physical limitations to do many jobs as well as the able-bodied.

To take advantage of the opportunities offered the disabled by modern methods of production, a special approach to placement has been necessary. The exact physical requirements of the job have to be determined and matched with the physical capacities of the man. This approach began to be adopted slowly after World War I and has now reached a highly developed and effective stage.

In 1925 the Federal Board of Vocational Education published a study of the jobs held by 6,097 physically disabled persons, in 628 different occupations (113). In 1930 it published a study of the jobs which individuals with specific handicaps could fill (109). Direct observations of workers in many jobs, made by experienced placement agents, revealed that of 70,420 jobs 40% could be filled by handicapped persons, 20% of them without any reservations. Anderson's study (4) in 1932 presented detailed tables showing the jobs successfully held by 4,404 disabled men with 97 different kinds of disability. In 1933 Millar and Odencrantz (52) listed the jobs successfully held by clients of the Employment Center for the Handicapped. The study by the California Bureau of Vocational Rehabilitation in 1935 (95) showed that 290 different occupations were being filled by 3,925 disabled persons. It was judged that approximately 30% of the job operations surveyed could be handled by disabled persons.

With the advent of the manpower crisis during World War II such beginnings as these were quickly capitalized and various methods of analyzing the physical demands of jobs and matching them to the physical capacities of workers were developed. These are described in the War Manpower Commission's *Physical Demands Analysis Manual* (104) and *Selective Placement for the Handicapped* (111), and several general discussions of the procedure have appeared (6, 7, 31, 63, 64, 84, 110). By use of a Physical Demands Form the job analyst describes the physical requirements of a job; the placement interviewer describes the physical capacities of an applicant in the same terms. The capacities of an applicant can then be compared with the requirements of different jobs until a matching pair is found.

Another aid to the placement of the disabled is the classification of jobs for the physically handicapped (28) in families or groups of occupations having similar physical requirements. Thus the job family "Arc Welder and Related Occupations Suitable for Individuals with Loss or Complete Disability of One Hand" includes a total of 42 occupations closely related to arc welding that can be manned successfully by persons with an amputated or disabled hand. By reference to the *Dictionary of Occupational Titles* and job description detailed statements of the exact requirements of particular jobs can be found.

One outcome of these efforts to match men and jobs was preparation of an *Operations Manual for the Placement of the Physically Handicapped* by the U. S. Civil Service Commission (103). Medical agents of the Commission analyzed the physical functions required for the performance of particular jobs and the environmental conditions under which they were carried out. On the basis of their findings they designated the types of disabled who could adequately perform the operations required in specific jobs. Part I of the *Manual* lists positions in certain government establishments, and private establishments holding government contracts, together with the types of disabled eligible for the positions. Part II lists all positions suitable for persons with particular disabilities. Similar manuals were prepared by the War Manpower Commission for a dozen war industries. These publications should do much toward breaking down the widespread single standard of physical adequacy.

The Civil Service Commission's *Manual* is also significant because it indicates the actual decree of vocational disability resulting from different kinds of physical disability. It is the source of the following percentages of jobs closed to persons with different disabilities, based on 3,000 jobs in a wide variety of industries:

Disability	*Percentage of jobs inaccessible*
Dwarf	99.7
Amputation of both feet	99
Amputation of both legs	98.5
Blind	98
Disability of both feet	98
Disability of both legs	98
Amputation of one arm	89
Amputation of one hand	83
Disability of back	75
Disability of one arm	69
Disability of one hand	57
Deaf	57
Amputation of one leg	53
Organic heart disease	53
Tuberculosis (arrested)	53
Disability of one leg	52
Disability of hip or shoulder	50
Amputation of one foot	47
Disability of one foot	47
Amputation of fingers	45
Disability of fingers	42
Blind in one eye	30
Hard of hearing	27

It would appear from this list that technologically, at least, industry is easily able to provide jobs for the disabled. In each case the proportion of jobs accessible to a type of disability is much greater than the proportion of persons with that particular disability in the population.

Deaver and Brown (20) have devised a general physical abilities rating-scale for use with disabled persons. It is intended primarily as a means of indicating the general functional efficiency of a person in objective terms and as a means of checking the success of training regimes.

A number of programs for placement of the disabled in industry have been described, although not in great detail (27, 29, 55, 62, 79).

VOCATIONAL REHABILITATION

Considerable material on the history and early examples of vocational rehabilitation in this country has been published (1, 9, 19, 33, 37, 41, 50, 61, 71, 72, 77, 96, 120). Beginning in World War I, vocational rehabilitation of the disabled has expanded until in 1944, 145,000 disabled persons were provided with rehabilitation services in all the states and territories of the United States. In 1943 the federal legislative provisions were expanded to include the mentally defective as well as the physically handicapped. For the first time, too, the blind were placed within the scope of the rehabilitation program. In addition to vocational training, provision is now made for medical and surgical attention if it will render the person employable or more advantageously so. These provisions apply to citizens 16 years of age or older (15, 16, 17, 65, 66, 68, 69, 94, 117, 118).

One main purpose of this legislation was to remove disabled persons from the public charity rolls by helping them become self-supporting. Quite early in the administration of the program it was found that the average cost of vocational training was about $300 per case, while the cost of caring for a disabled person at public expense was about $500 annually. The possibility of saving many times $500 with a single expenditure of $300 has served as an effective stimulus in financing this program. In 1944 federal and state funds amounting to $6,250,000 were expended on the rehabilitation program.

The degree of success of the program could be judged from the proportion of the disabled reached and the results for those who have been aided. The Office of Vocational Rehabilitation has estimated that in 1942 over 16,000,000 persons between the ages of 15 and 64 in the United States were suffering from chronic disease or physical impairment (67). The proportion of these who could benefit by vocational rehabilitation is not known. There is clearly a great need for further knowledge so that the extent of the program required can be estimated.

Lowman (45) found that of 437 discharged poliomyelitis patients studied in the late 1930's, 25% received training under the state Bureau of Vocational Rehabilitation; 26% were aware of the service but had received no training; and 49% had not heard of it.

The results of the programs should be analyzed, ideally, in objective studies of clients before and after rehabilitation. Many reports of such studies have been made, some in the annual reports of state agencies. In 1928 a report was made upon a group of persons given rehabilitation training in 1921–24 (114); 6,391 of these persons were also interviewed 2½ to 5 years after rehabilitation. It was found that the number of unemployed had decreased slightly as compared with the pre-rehabilitation period. The following vocational activities had increased in frequency: trade, clerical, technical and professional, public service, domesic and personal service. The following had decreased in frequency: semi-skilled manufacturing, skilled manufacturing, labor, agriculture, transportation, mining. Wages had increased as indicated in the following tabulation (9):

	% receiving specified wage	
Weekly wage	*Pre-rehabilitation*	*Post-rehabilitation*
Less than $20	40.9	29.2
$20–29	25.1	33.2
$30 or more	23.3	24.2
Not reported	10.7	13.4
Total group	100.0	100.0

This and similar studies are interpreted to mean that rehabilitation training returns men to vocational positions, on the average, equal to or better than those held before incapacitation by injury or disease. But what would have happened to these men without rehabilitation training? To be certain of one's conclusions, study of a control group of non-rehabilitated persons with similar handicaps is also required. Most of Anderson's (4) subjects had not received vocational retraining, and his results are not much less encouraging than these (cf. p. 270).

Lowman (45) compared his employed and unemployed poliomyelitis cases with respect to their use of the services offered by the state Bureau of Vocational Rehabilitation, and obtained the following percentages:

	Unemployed	*Employed*
Training services known about and used	35.6	36.0
Training services known about and not used	30.8	22.4
Training services not known	33.6	41.6
Total group	100.0	100.0

This series of cases provides no evidence in support of the thesis that training is advantageous in avoiding unemployment. Classification of the employed group by income also failed to reveal any advantage of training by the Bureau of Vocational Rehabilitation. It can be argued, of course, that the trained group may have been more highly selected for unemployability than the others and that without the training their unemployment would have been greater, but we know of no evidence to support this assumption.

Factors, other than rehabilitation training, which might account for the relatively good status of the rehabilitated groups indicated by the data of the Federal Board for Vocational Education are maturity and special job placement facilities. The lapse of 2½ to 5 years between training and follow-up meant that these men had benefited from the normal advancement which comes with experience and maturity. The rehabilitation program involved aid in placement; perhaps this was the essential factor.

A technical defect in the 1928 study of rehabilitated persons is the relatively large number of cases not reported upon in the initial and follow-up studies. With respect to type of job, the proportions not reported upon were 3.5% and 18% in the pre-rehabilitation and post-rehabilitation series, respectively; with respect to salary, 10.7% and 13.4%. The number of untabulated cases is large enough in these instances to justify questioning the interpretation of the results.

These criticisms are not offered to belittle the value of rehabilitation, but only to emphasize the need for thorough studies of its effectiveness. Actually the case examples which accompany some reports are the most convincing evidence. They tend to include, at least incidentally, more than the employment history of the person. While employment is extremely important, it is after all a means to an end. The more basic question is: Are these people helped by their rehabilitation erperiences to live happier lives? The case histories, also, often give suggestions as to the aspects of the rehabilitation experience which are important for the particular client, e.g., personal counseling, vocational guidance, outside contacts, financial aid, job placement, vocational training. Sometimes one, sometimes another factor appears to be of predominant importance.

This raises the question of the methods used in the rehabilitation program. In the main the procedures have been preeminently practical and rule-of-thumb. Two principles are now widely followed: 1) guidance and training is an individual matter and cannot be handled by group methods, 2) a single agent should follow a client from first contact to placement (119). These principles place a heavy responsibility on the rehabilitation agent. He must be in some degree an expert on vocations (gauging physical demands of jobs), a clinical psychologist (handling personality maladjustments, evaluating abilities), an educator (selecting courses and institutions), a physician (estimating physical abilities). Naturally enough, few persons with all these qualifications have been available, and agents have been largely self-taught with regard to some of these skills.

In recent years other patterns of operation have been developed in an effort to bring more specialized skills into the picture. The New Jersey Rehabilitation Commission has done pioneer work in this direction (39, 59, 60). For some years it has held diagnostic clinics where information concerning the client is collected by a physician, vocational advisor, psychiatric social worker, psychiatrist, and psychologist, and then discussed by the entire staff. After the client is presented to the group and questioned, recommendations are made on the basis of the group judgment. The Commission is emphatic in its belief that its experience has demonstrated the superiority of the case conference technique to that of handling by an individual agent. In this group Kessler and Reznikoff (39, 59) have emphasized the importance of the emotional problems of disabled people and the necessity of a clinical approach to these problems, requiring many expert skills. This same viewpoint was expressed much earlier by Franz (25).

Somewhat similar to the New Jersey procedures are those used in the Rehabilitation Clinics of the Connecticut State Bureau of Rehabilitation Service (8, 48, 54, 93). In addition to physicians, psychologists and vocational experts, the panel includes personnel men from employing industries. Several clients are presented in succession at one session of the clinic, and some will usually be hired immediately by the personnel men present. In other cases, training programs or other job opportunities are recommended. It is reported that the presence of the personnel men has been of great value in bringing about acceptance of the handicapped in plants previously closed to them. Follow-up studies have shown that 84% of the disabled placed through these clinics were working successfully at the levels of skill recommended.

These new departures in technique point to the need for a revaluation of rehabilitation procedures. Without doubt there is great need for professional training of rehabilitation personnel, to provide a combination of skills and knowledge that is not developed in any existing training program. Shartle and Dvorak (64) and Gleason (28) have suggested the requirements in this field. Elliott (23) and Marquis, Novis, and Wesley (48) have pointed to the opportunities for psychologists in the program. Viteles (78) has reviewed some of the relevant psychological literature. Fundamentally, new patterns of procedure which will make use of specialists while not losing sight of the individual client appear necessary.

Home and Sheltered Employment

It is estimated that 350,000 permanently disabled persons in the United States are unable to fit into regular industrial establishments (67). Many of these, however, are able to achieve some economic independence under special conditions. Home production and so-called sheltered work shops have been the mainstays of the efforts to provide vocational opportunities for these people. Such programs have operated under several handicaps. One has been the difficulty of adjusting wages in accordance with the decreased productivity of the workers without undercutting wage standards and without taking advantage of the economic helplessness of these persons. In an effort to set standards for these industries, the National Advisory Committee on Sheltered Work Shops has prepared a code (112) and provision has been made under the Fair Labor Standards Act for lower minimum wages to be paid to such workers (18, 85, 107).

A second handicap has been the charitable aspect of almost all industrial programs for the severely disabled. It appears that they all operate with the aid of private or state subsidies. This is probably one important factor limiting the magnitude of these industries. The largest sheltered industry in the United States provided 13,883 persons with an average of 100 days of work in 1944 (91). Just how many persons are served by sheltered work shops and home industries has never been adequately determined. That it is a small proportion of those who might be benefited is clear. One of the best surveys of this aspect of the handicapped employment problem is given in a report of a panel discussion by persons actively engaged in various programs (75). British moves in this direction are mentioned in the following section. In Russia industrial production cooperatives of invalids are said to be well developed (123).

Neuschutz (53) has described a large number of jobs suitable for severely handicapped people; she makes very practical suggestions for launching into business and lists references for further reading.

Toward a Solution to the Employment Problem

Employment is one of the crucial aspects of the adjustment problems of the physically disabled. In the past widespread exclusion from the possibility of economic independence has greatly enhanced their personal and societal problems. It is an anachronism of the war that the position of these people has been greatly benefited in this respect, and the question of postwar employment possibilities arises. Will employment opportunities continue on this improved level, or will prewar discriminative practices return?

Several factors point to an improved situation:

1. Successful wartime experiences with disabled employees may be expected to result in permanent changes in policy by some employers.

2. Improved placement procedures should make the economical use of handicapped personnel easier and more certain.

3. The expanded training facilities provided by the Federal-State Vocational Rehabilitation Program will develop an increasing number of skilled, disabled craftsmen.

4. Patriotic motives leading to the employment of disabled war veterans may break down some of the rationalizations against the disabled in general.

5. The public relations value of employing the disabled may be considerable.

6. The increasing age of the labor force and the greater proportion of women in it may necessitate revisions in physical standards, despite any contrary desire on the part of employers.

On the other hand, certain factors which will operate to increase discrimination may be anticipated in the postwar situation. These factors are largely related to the condition of the labor market and the competitive situation within industry. Despite favorable reports on the productivity of disabled employees, it must be recognized that they are in some degree a source of increased cost and organizational rigidity. The fact that the exact extent of the burden placed upon the employer of the disabled is not known only serves to increase its effectiveness in discouraging their employment. There is no limit to the liability that can be imagined. If there is in the labor market a supply of men who do not require special placement procedures, special limitations on the kinds of work they can do, special machines, unknown compensation liabilities, etc., why should an employer bother with those who do require them? Competitive business clearly cannot saddle itself with philanthropic activities which reduce its effectiveness in competition. Despite exaggeration in many quarters, there is reason to believe that the employment of physically disabled persons in most industries does divert some effort from producing at a profit. So long as this is the accepted task of industry, it is probable that exclusion of all but the physically most desirable employees will continue to be the general policy.

Without doubt, the postwar employment situation of the handicapped will remain confused. Some of the gains of the war period will surely be retained, but to the degree that the labor market eases and competition for restricted markets increases, discriminative practices can be expected.

If this analysis of the situation is essentially correct, some of the moves necessary to insure economic opportunity for the disabled are clear. In the first place, humanitarian appeals can be expected to achieve little.

Even if they are effective in some degree, they are probably undesirable for they rob the disabled person of the very thing he needs most profoundly, a sense of self-esteem and security. The oft-mentioned virtues of loyalty and conscientiousness on the part of disabled workers rest upon feelings of inadequacy, insecurity, and dependence upon the good will of the employer. This is hardly a sound basis for the best sort of personal adjustment. It likewise is not a comfortable position for the conscientious employer, for there is a fine line to be drawn between humanitarianism and exploitation. Dependent, insecure employees are docile employees, and who is to say which employer of large numbers of disabled is the humanitarian and which is avoiding labor troubles?

It would appear that for the good of both the disabled employee and the employer the rules of the industrial game should be changed to include the disabled worker in the labor force as a matter of course. There are two ways by which this might be done.

During the war, concern over the welfare of minorities increased, and legally coercive means of preventing discrimination appeared. The Fair Employment Practices Committee created by Executive Order and various similar state governmental organs created later, suggest one procedure for enforcing nondiscriminative practices throughout industry. Under these or similar statutes, the physically disabled might be designated a group with respect to which discrimination is unlawful in occupations which can be satisfactorily performed by them. In this way, the added cost and inconvenience of employing disabled persons would be spread throughout industry, and the competitive situation within an industry would be equated in this respect. This plan would require official job analyses designating particular jobs as suitable for particular kinds of disability.

A similar result is achieved in Britain by a much more elaborate and probably a more adequate scheme (83, 87). Under the Disabled Persons (Employment) Act, enacted in the spring of 1944, there was created an official register of disabled persons from which employers are required to hire a designated quota of their labor force. The quota is fixed from time to time in accordance with the proportion of the nation's total labor force enrolled in the register. The details of the law's execution have yet to be established.

It appears that this law will produce a revolutionary change in the status of physically disabled persons. It gives them an equal chance with physically normal persons for the jobs they are physically able to fill. It guarantees them the same opportunities to work as the nondisabled without dependence upon the good will of a particular employer. The magnitude of the change thus created in the social-psychological situation of the physically disabled is difficult to exaggerate. From a subordinate underprivileged position, in which the right to work is achieved only through fortunate circumstances and manifestation of abnormal loyalty and conscientiousness, this enactment moves the disabled into a secure position in the labor market.

Such an arrangement would appear to be advantageous to employers, too, for it places them all upon the same competitive footing, and it removes a source of conflict as to what policy should be followed. At least one employer made such a proposal a decade ago in replying to a White House Conference questionnaire. He said, "I think there should be a certain fixed policy whereby each industry should use their rightful proportion of such [disabled] employees so long as they can be employed without being an imposition or a direct handicap to the business." (121)

The operation of the program thus instituted in Britain will be followed with great interest by all concerned with the welfare of the disabled, for it represents one of the most far-reaching efforts to meet their problem. The new British plan also makes provision for the subsidization of sheltered industries and settlements for those persons unable to adjust to normal working conditions.

As noted previously, the basic motivation of the large expenditures for the vocational rehabilitation of disabled persons has been the economic motive of enabling them to support themselves and thereby avoid the necessity of a lifetime of aid from public charity. However, the effectiveness of such a program depends upon the end result of employment; without this, the value of the training is largely lost. A complement to the vocational rehabilitation program would be legislation requiring the acceptance of these people for employment. Such legislation would almost certainly reduce the expense of the rehabilitation program. As it is, a not inconsiderable amount of the time of personnel administering the program is spent in "selling" employers the idea of hiring the disabled who have been trained. If more jobs were opened to these people, it is highly probable that there would be more training on the job, and both the training and the promotional parts of the program could be materially reduced.

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